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ENERGY RELATED INVENTIONS PROGRAM

A Joint Program of the
DEPARTMENT OF ENERGY AND THE NATIONAL BUREAU OF STANDARDS

STATUS REPORT

OCTOBER 1985

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
OFFICE OF ENERGY-RELATED INVENTIONS
GAITHERSBURG, MARYLAND 20899

STATUS REPORT OF THE ENERGY-RELATED
INVENTIONS PROGRAM AS OF OCTOBER 1, 1985

I. BACKGROUND

The Office of Energy-Related Inventions (OERI) was established within the National Bureau of Standards (NBS) under the terms of Section 14 of the Federal Nonnuclear Energy Research and Development Act of 1974. Section 14 directs NBS to "give particular attention to the evaluation of all promising energy-related inventions, particularly those submitted by individual inventors and small companies for the purpose of obtaining direct grants" from the Department of Energy (DOE).

A separate office was established within DOE to coordinate financial and other DOE support to be provided for inventions recommended by NBS. The NBS and DOE offices together constitute the Energy-Related Inventions Program.

II. OVERVIEW OF PROGRAM OPERATION

The Energy-Related Inventions Program is jointly operated by NBS and the DOE. Funding is provided in the DOE budget (Conservation and Renewable Energy, Conservation, Energy Conversion and Utilization Technology) with NBS reimbursed for activities approved by DOE.

NBS (OERI) is responsible for evaluation of inventions whether submitted directly to OERI or submitted to DOE or other agencies and forwarded to OERI. OERI is also responsible for outreach activities aimed at bringing the Program to the attention of inventors and small businesses.

OERI reviews and processes all evaluation requests. Evaluation is based on three general criteria: technical feasibility, potential energy-conservation or supply impact, and commercial feasibility. Inventors are notified of the results of the evaluation in each case. Those inventions which meet the NBS criteria for recommendation are forwarded to DOE for possible support action.

Inventions forwarded by the OERI to DOE are recommended by OERI as "technically valid and worthy of consideration for Government support" under the NBS/DOE Inventions Program. The OERI report furnished with the transmittal letter explains in detail the advantages of the technology as well as any qualifications of the recommendations such as required testing. It also provides guidance to DOE and the inventor in determining the nature and extent of support to be given.

Inventions recommended by OERI may be at any stage of development; some may be conceptual, others at the laboratory testing stage, while others may be in production or may be in the process of being marketed. Support to be furnished will depend largely on what is required to move invention development forward or to resolve the question of whether development should continue; the latter question is of particular interest where the NBS recommendation is based on data furnished by the inventor and the recommendation is qualified by an expressed need for data validation under controlled testing conditions.

The intent by DOE in each case is to accept the NBS recommendation and provide the appropriate support. However, there will be (and have been) cases in which DOE cannot or will not provide support. DOE attempts to reach agreement between the inventor and DOE on nature and extent of support within constraints. Constraints include the capabilities of the inventor and/or the company involved, possible duplication of prior or existing DOE-funded efforts, availability of private sector support, and DOE fund limitations.

It should be noted that no further technical evaluation is performed by DOE, beyond that of NBS'. DOE does reserve the right to question and reject the NBS recommendation and to restrict support because of policy and/or funding considerations.

Each case is decided on the basis of individual merit and need. If DOE decides to support the invention, support can include: a grant, a contract, or direct assistance of a technical or business nature. DOE's objective is that, at the completion of this support, the inventor will be in a position to do one or more of the following:

- Compete effectively in obtaining contracts from other sources (including existing government programs), to permit further development of the invention.
- Assemble, with confidence of success, the people and capital necessary to produce and market products derived from the invention through a business enterprise in which the inventor is a major participant.
- Negotiate arrangements with an existing company that will develop the inventor's product for commercialization.

III. EVALUATION PROCEDURES (NBS)

There are three principal steps in the evaluation process used by the National Bureau of Standards' Office of Energy-Related Inventions. In the first step, Disclosure Review and Analysis, invention disclosures are either accepted or rejected for evaluation, depending upon whether or not the invention is within program scope and the disclosure is sufficiently well-prepared to enable evaluation. If accepted, a formal evaluation is initiated.

First-Stage Evaluation is a technical screening in which brief opinions are obtained from OERI staff evaluators, other government scientists or engineers, or consultants or contractors. If the invention is rated as "promising" in this first-stage, Second-Stage Evaluation is initiated. ("Promising" means the invention seems to be technically feasible, have significant energy conservation or supply potential, and is economically and commercially practical.)

In Second-Stage Evaluation a more in-depth analysis is conducted, resulting in a formal report. If Second-Stage Evaluation confirms the finding of "promising," the disclosure and evaluation results are forwarded with a recommendation for Government support to DOE.

Throughout the process, the inventor is kept informed of the status of the evaluation. When evaluation is complete after either first-or second-stage, a letter of notification is sent to the inventor reporting the results of the evaluation. If Second-Stage Evaluation had been conducted, a copy of the second-stage invention review is also sent to the inventor.

IV. SUPPORT PROCEDURES (DOE)

Upon receipt of a recommendation from NBS, DOE contacts the inventor, provides details of the support procedures, and requests a statement as to the nature and extent of support desired, generally in the form of a proposal or grant application. The DOE invention coordinator works with the inventor in proposal preparation to ensure effective review of support options and to develop a satisfactory statement of work and support plan. Decisions are then made on whether or not support will be provided as well as on the nature and extent of the support.

If financial support is to be provided, DOE initiates procurement action, monitors progress of the procurement action, and helps to expedite until the award is made.

While financial or other support is being provided, the DOE invention coordinator monitors and assists the inventor's effort. He also maintains a status report for use by both DOE and NBS. The following computerized report from OERI lists each recommendation by OERI and briefly describes its status as of September 30, 1985. Status is described in terms of the following steps in the DOE support process:

<u>Analysis I</u>	Recommendation received from NBS and processed, file initiated, etc. Inventor requested to submit description of proposed work. Receipt of inventor's preliminary proposal initiates next stage.
<u>Analysis II</u>	Formulate options for support, based upon input from NBS, DOE program staff, and inventor. Determination of the feasible options initiates next stage.
<u>Decision Phase</u>	Statement of Work derived from above options. Inventor requested to submit supporting documents for procurement action. Prepare purchase request.
<u>Other Assistance</u>	National Laboratory testing, or business planning assistance, sometimes leading to a grant award.

<u>Procurement</u>	Step-by-step processing of all documents leading to an award of grant or contract.
<u>Award</u>	Inventor awarded grant or contract. Work commences. Final report due at end of work period.
<u>No Basis For DOE Support</u>	Inventor notified that sources of support within DOE have been investigated, but recommendation will not be supported, e.g., inventor not interested, no area of appropriate DOE support could be identified, conflict with other DOE contractors being supported.
<u>Complete</u>	Inventor has complied with all the requirements of his Statement of Work, and/or DOE assistance in this program is terminated.

V. SUPPLEMENTARY ACTIVITIES

National Innovation Workshops (NIW)

This project was initiated in early 1980 as a means of informing inventors about the Program and increasing the percentage of higher-quality inventions submitted to OERI. Another objective of the Workshop series is to assist inventors (thus to stimulate innovation in general) by putting them in touch with their community resources and by providing practical instruction in the various elements of the innovation process.

Workshops are conducted in a standard format as 2-day seminars. On each day a plenary session and a luncheon session feature national-level speakers on invention and innovation. Three 1-1/2 hour periods each day then are designated in which 8 to 10 concurrent Workshop sessions are conducted.

The Workshops are organized as regional activities by a committee composed of representatives from such regional organizations as universities, venture or other financing groups, private sector institutions concerned with technological innovation, state and local government agencies, patent law associations, etc. Federal involvement is restricted to provide guidance and financial support. The federal role is catalytic in nature in that Workshop feasibility is demonstrated with the expectation that the regional committee will continue Workshops and similar activities in the future without federal involvement.

Twenty-nine NIWs have been held to date. Others scheduled are: Salt Lake City, Utah - November 15-16, 1985; Honolulu, HI - December 6-7, 1985; Newark, New Jersey - March 21-22, 1986; St. Louis, MO - May 9-10, 1986; and New England in the Spring of 1986. Attendance has averaged about 250 inventors and small businesses.

Commercialization Planning Workshops (CPW)

This series of workshops was initiated in June 1984 as a mechanism for providing direct and immediate assistance to inventors recommended by NBS. Each workshop brings together a group of 10-14 recommendees for a three day meeting with a "faculty" of six workshop leaders who are selected on the basis of their expertise in at least one aspect of innovation (business planning, marketing, finance, licensing, etc.). Workshop attendance is restricted to the recommendees and the faculty.

The three day meeting is devised to provide a concentrated educational/informative experience for each recommendee; travel and other meeting expenses are paid for by the Government. The objective in each case is for the recommendee to develop, with the aid of the faculty, a detailed plan for commercialization of his invention. The plan then serves as the principal basis for the DOE office to conduct their initial review of the recommendation (Analysis I).

Three workshops were held during calendar 1985 in Tucson, AZ; Leesburg, VA; and Seattle, WA.



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Recommendation Status Listing

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<u>DOE Number</u>	<u>Inventor Name</u>	<u>Invention Title</u>	<u>State or Country</u>	<u>Status</u>	<u>Page</u>
1	Willard Graves	Demand Metering System for Electric Energy	MD	No DOE Support	1
2	Rita Paleschuck	Fuel Miser	NY	Complete	1
3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin	MD	Complete	2
4	Joseph C Yater	Power Conversion of Energy Fluctuations	MA	Complete	2
5	George C Austin	Diesel Engine Conversion System	CA	Complete	3
6	Albert B Csonka	Micro-Carburetor	NY	Complete	3
7	David Virley	Hydraulically Powered Waste Disposal Device	CA	Complete	4
8	Vincent E Carman	Inertial Storage Transmission	OR	Complete	4
9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols	NY	Complete	5
10	Harrison Robert Woolworth	Scrap Metal Preheating	WA	Complete	5
11	Ronald H Smith	Solar Collector	CA	Complete	6
12	Frank R Summa	High Frequency Energy Saving Device	NY	Complete	6
13	Ranendra K Bose	Anti-Pollution System	LA	Complete	7
14	Daniel J Schneider	Aerodynamic Lift Translator	TX	Complete	7
15	Dante A Raponi	Estacron	NC	Complete	8
16	John W Bruce	Vacuum Drying	SD	Complete	8
17	David W Doyle	Osmotic-Hydro Power Generation	VA	Complete	9
18	G R Fitterer	Control of Low Carbon Aluminum Steels	PA	Complete	9
19	Walter J Hasselman, Jr	Rigid Board Insulation	NY	Complete	10
20	Thomas P Hopper	Thermal Shade	NH	Complete	10
21	Robert S Norris	Waste Oil Utilization System	MA	Complete	11
22	Herbert G Lehmann	Fuel Burner Attachment	CT	No DOE Support	11
23	Int'l MGD Companies	Microgas Dispersions	MI	No DOE Support	12
24	Drew W Morris	Can and Bottle Crushing Apparatus		Complete	12
25	Donald C Erickson	Sulfur Removal From Producer Gas	MD	Complete	13
26	Seymour Jarmul	Compact Energy Reservoir	NY	Complete	13
27	R J Jones	Waste Heat Utilization, Commercial Cooking	CA	Complete	14
28	Gilbert W Didion	Ultraflo	OH	Complete	14
29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms	NH	Complete	15
30	Leopold Pessel (Dec'd)	Removing Sulfur Dioxide From Flue Gases	PA	Complete	15
31	James C Withers	Ceramic Rotors and Vanes	VA	Award	16
32	Robert A Caughey	Wood Gas Reactor	NH	Complete	16
33	Joseph B Vogt	Temperature Indicating Device	MI	Complete	17
34	Hal Ellis	Delphic Thermogenic Paint	FL	Complete	17
35	Gulab Chand Jain	Solar Pond System	India	No DOE Support	18
36	Richard P Gingras	Computerstat	CT	Complete	18
37	Lawrence E Bissell	Hotwater Engine	CA	No DOE Support	19
38	John McCallum	Reduction Volatilizations	OH	Complete	19

DOE Number -----	Inventor Name -----	Invention Title -----	State or Country -----	Status -----	Page -----
39	James H Lawler	Lawler Steam Generator	CA	No DOE Support	20
40	Roland P Soule	Blue Water Gas	NY	No DOE Support	20
41	William F Armitage, Jr.	Photovoltaic Device by Solid Phase Growth	MA	No DOE Support	21
42	Everett Millard	Flue Baffle Assembly	IL	Complete	21
43	Sidney A Parker	Thermal Gradient Utilization Cycle	TX	Complete	22
44	Leon Lazare	New Working Fluids for Absorption Heat-Pump	CT	Complete	22
45	Joe W Fowler	Bulk Cure Tobacco Barn	NC	Complete	23
46	David J Secunda	Thexon Dehydration	NJ	Complete	23
47	Robert M Arthur	Wastewater Aeration Power Control Device	WI	Complete	24
48	Werner E Howald	Howald Combustor	OH	Complete	24
49	Wayne S Boals	Automatic Control System for Water Heaters	CA	No DOE Support	25
50	Robert Cameron	Scotsman Fuel Energizer	IL	Complete	25
51	Richard B Bentley	Thermal Efficiency Construction	NY	No DOE Support	26
52	Robert G Landry (Dec'd)	Air Wedge	ME	No DOE Support	26
53	Harry E Wood	High-Efficiency Water Heater	LA	Complete	27
54	Paul H Schweitzer (Dec'd)	Optimizer	PA	Complete	27
55	Richard D & Chester Palone	Electrically Heated Sucker-Rod	AR	No DOE Support	28
56	William P Boulet	Flexaflo-The Wet Fuel Dryer	LA	Complete	28
57	Robert H Wieken	X-S Smoke Eliminator	MN	Complete	29
58	Charles M Kirk	A Multiple Spark System Using Inductive Storage	FL	Complete	29
59	Bernard Zimmern	Volumetric Gas Turbine	France	No DOE Support	30
60	William H Cone	Electric Transport Refrigerator	IA	Complete	30
61	Willing B Foulke	Fuel Preparation Process	DE	Complete	31
62	Thaddeus Papis	Tapered Plate Annular Matrix	CA	Complete	31
63	Thomas LoGiudice	Fluorobulb	NY	Complete	32
64	Shalom Mahalla	Mahalla Process	AZ	Complete	32
65	Lee A Henningsen	Watt Vendor	PA	Complete	33
66	Philip Zacuto	Heat Extractor	NY	Complete	33
67	James A Browning	Hydraulic Power for Windmills	NH	Award	34
68	Leroy M Bissett	Helical Screw Compressor	VA	Other Assistance	34
69	Enoch J Durbin	Ionic Fuel Control	NJ	Complete	35
70	Kenneth A Stofen	Compressor Heat-Recovery System	WI	Complete	35
71	Arleigh Wangler	Knight Guard	CA	No DOE Support	36
72	Joe Agar	Petro-Plant Waste Gas Boiler	TX	No DOE Support	36
73	Melvin H Sachs	INTECH	MI	Complete	37
74	G R Fitterer	Fuel Cell	PA	Complete	37
75	Richard Jablin	Coke Quenching	NC	Complete	38
76	Donald R Ross	The Ross Furnace	TX	Complete	38
77	James W McCord	Variable Heat Refrigeration System	KY	Complete	39
78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources	CA	No DOE Support	39
79	Marvin L Wahrman	Oil Well Bit Insert	CA	Complete	40
80	Patsie C Campana	Improved Unfired Refractory Brick	OH	No DOE Support	40

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
81	C Richard Panico	Flash Polymerization	MA	Complete	41
82	Robert L Ullrich	Cool Air Induction	NM	Complete	41
83	Charles James Bier	Vertical Solar Louvers	VA	Complete	42
84	Kenneth W Odil	Kinetic Energy Type Pumping System	TX	No DOE Support	42
85	Charles G Kalt	Dielectric Windowshade	MA	Complete	43
86	Douglas MacGregor	Coke Desulfurization	UT	Complete	43
87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ	CO	Complete	44
88	Alex Rutshein, et al	System-100	IA	Complete	44
89	Henry E Allen	Continuous Casting Process and Apparatus	NY	Complete	45
90	Clinton Van Winkle	Grain Dryer	NE	No DOE Support	45
91	James Allen Bagby	Mine Brattice	KY	Complete	46
92	John L Carroll	Tri-Water	OR	No DOE Support	46
93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions	GA	Complete	47
94	William M FioRito	Lantz Converter	CA	Complete	47
95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine	PA	No DOE Support	48
96	Floyd R Anderson	Leavell, Pneumatic Percussion Tools and Systems	AR	Complete	48
97	James W McCord	Water Drying System	KY	Complete	49
98	James L Chill	Process Development to Conserve Energy and Material Bearings	OH	Award	49
99	Oscar Weingart	Light Weight Composite Trailer Tubes	CA	Complete	50
100	Michael F Zinn	Solaroll	NY	Complete	50
101	Sharad M Dave	Controlled Combustion Engine	MI	Complete	51
102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners	MO	Complete	51
103	Edwin E Eckberg	Low Voltage Ionic Fluorescent Light Bulb	ID	Complete	52
104	Eskil L Karlson	Low Continuous Energy Mass Separation System	PA	Complete	52
105	Allen D Zumbrunnen	High Frequency Furnace	UT	Complete	53
106	James L Ramer	Deep Shaft Hydro-Electric Power	MO	No DOE Support	53
107	Ping-Wha Lin	Waste Products Reclamation Process	IN	Complete	54
108	Paul J Cromwell	Processing Recovery of Aluminum	NY	Complete	54
109	H. W. Kennick	Hydrostatic Meat Tenderizer	OR	Complete	55
110	Karl H. Bergey	Improved Windpower Generating System	OK	Complete	55
111	John C Haspert	Haspert Mining System	CA	Complete	56
112	Paul Zanoni	Pump	CT	Award	56
113	Henry J Wallace	Wallace Mold Additive System	PA	Complete	57
114	Renato Monzini	New Energy-Saving Tire for Motor Vehicles	Milan, I	No DOE Support	57
115	Clyde G Phillips	Refrigeration System	DE	Complete	58
116	Roy J Weikert	Model 5000 ASEPAK System	OH	No DOE Support	58
117	John Mattson	"Solarspan" Prism Trap	MA	Complete	59
118	Roderick L Smith	Energy Adaptive Control of Precision Grinding	IL	Complete	59
119	Eldon L Asher	Air Ratio Controller (AERTROL)	FL	No DOE Support	60

DOE Number	Inventor Name	Invention Title	State or Country	Status	Page
120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle	MA	Award	60
121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction	MI	No DOE Support	61
122	Michael D Leshner	Lean Limit Controller	NJ	Complete	61
123	J Paul Pemsler	Comminution of Ores by a Low-Energy Process	MA	Complete	62
124	Charlton Sadler	Solar Collector	FL	No DOE Support	62
125	Frank W Bailey	The Turbulator Burner System	NJ	Complete	63
126	Karl D Scheffer	Vaclaim	NY	Complete	63
127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands	UT	Complete	64
128	J D Seader	Continuous Distillation Apparatus and Method	UT	Complete	64
129	James E Kessler	Super U System - Snap Strap	KS	Complete	65
130	Arnold R Post	Furnace Input Capacity Trimming Switch	PA	No DOE Support	65
131	Edgar R Jordan	Valve Deactuator for Internal Combustion Engines	MI	Complete	66
132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material	IN	No DOE Support	66
133	F J Perhats	AUTOTHERM Car Comfort System	IL	Complete	67
134	John C Rupert	Expanded Polystyrene Bead Insulation System	MN	Complete	67
135	M Hossein Khorsand	Point Focus Parabolic Solar Collector	CA	Complete	68
136	Albert S Richardson, Jr.	Windamper	MA	Complete	68
137	H Roy Weber	A Portable Pollution Free Automobile Incinerator	HI	Award	69
138	Gerald R Seeman	Phantom Tube	CA	No DOE Support	69
139	Louis L Marton	Transformer With Heat Dissipator	CA	No DOE Support	70
140	W E Mattson	Counter Flow Dual Tube Heat Exchanger	MN	Complete	70
141	Samuel Shiber	New Hydrostatic Transmission	IL	Complete	71
142	Anatol Michelson	Process for Heatless Production of Hollow Items	FL	Complete	71
143	Robert A Clay	Oil Well Pump Jack	CA	Award	72
144	Robert C Saunders, Jr.	SpaCirc Space Circulation Fan	MD	No DOE Support	72
145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides	PA	Complete	73
146	Sylvain J Pirson	Line Integral Method of Magneto-Electric Exploration	TX	Complete	73
147	Henry Keep, Jr.	Railroad Switch Heater	CT	No DOE Support	74
148	Leonard A Duval	Reclamation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes	OH	Complete	74
149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)	MA	Complete	75
150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement	LA	Complete	75
151	Yao Tzu Li	Film Type Storm Window	MA	No DOE Support	76
152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System	ND	Complete	76

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153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods	CA	No DOE Support	77
154	Forrest E Chancellor	Rotating Horsehead for Pumping Units	CA	Analysis	77
155	James M Cleary	Slip Mining	MA	Award	78
156	James J Dolan	Direct-Current Electrical Heat-Treatment.	CT	Complete	78
157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.	PA	Complete	79
158	Paul F Pugh	Energy Conservative Electric Cable System	CA	Award	79
159	William D Gramling	Non-Tubing Type Gas Powered Lift Device	MD	Complete	80
160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle	CT	Complete	80
161	Anthony A duPont	duPont Connell Energy Coal Gasification Process	CA	Award	81
162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline	TX	Complete	81
163	Dennis D Howard	Thermotropic Plastic Films	PA	Complete	82
164	John D Gill	Elastomer Energy Recovery Elements	MD	Complete	82
165	Wu-Chi Chen	Process for Recovering Hydrogen from H ₂ S	TX	Complete	83
166	Robert F Evans	Borehole Angle Control	TX	Award	83
167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids	ID	Complete	84
168	Spencer Kim Haws	The Hot Water Saver	WA	Complete	84
169	Mervin W Martin	MIRAFOUNT	MO	No DOE Support	85
170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture	CA	Analysis	85
171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration	NJ	Complete	86
172	Edward A Griswold	GEM Electrostatic Filtration System	CA	Complete	86
173	Bill Burley	Thermal Ice Cap	PA	Complete	87
174	E O Nathaniel	Skate on Plastic Ice Skating System	MO	No DOE Support	87
175	Den M Acres	A Low-Energy Carpet Backing System	GA	Complete	88
176	John D. Finnegan	Self-Contained Portable Solid Fuel Furnaces	MN	Decision Phase	88
177	Robert John Starr	The Solar I Option	VT	Complete	89
178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material	GA	Complete	89
179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic, Solar Systems	MA	Complete	90
180	Richard E Dame	Adjustable Solar Concentrator (ASC)	MD	Complete	90
181	Eskil L Karlson	The Karlson Ozone Sterilizer	PA	Complete	91
182	Robert F Evans	Improved Seal for Geothermal Drill Bit	CA	Award	91
183	E. Stephen Miliaras	Increased Vapor Generator Feature	MA	Complete	92
184	Nathan Gold	Coasting Fuel Shutoff	CA	Analysis	92
185	Cecil H Wolf	Insulated Garage Door	IL	Analysis	93
186	Sylvain J Pirson	Oil Recovery by In-Situ Exfoliation Drive	TX	Analysis	93

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187	Lewis W Parker	Variable Field Induction Motor	FL	Analysis	94
188	John C Haspert	Remote Controlled Underground Mining System	CA	Complete	94
189	Gerald Eastman	Pump Jack	OK	Complete	95
190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method	OH	Complete	95
191	Milton Pravda	Rotary Heat Pump Air Conditioner	WA	Award	96
192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer	ME	Complete	96
193	Nicholas Archer Sanders	Engine Heating Device	VT	Award	97
194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft	AZ	Complete	97
195	Edward L Barrett (Dec'd)	Proportional Current Battery	IL	Award	98
196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm	NE	Complete	98
197	Robert F Karlicek	Frequency Regulator	CA	Complete	99
198	Robert H Nealy	The Thermatreat System	PA	Analysis	99
199	John Hunter	Rotary Coal Combustor and Heat Exchangers	Scotland	Award	100
200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas	MA	Award	100
201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System	OH	Complete	101
202	Yao Tzu Li	Wobbling Type Distillation Apparatus	MA	Complete	101
203	Morris R Jeppson	Microwave Methods and Apparatus for Paving	CA	Complete	102
204	Raymond P Holland Jr	The Induction Propeller	NM	No DOE Support	102
205	Charles B James	Energy Efficient Arc Welding System	MO	No DOE Support	103
206	Jonathan Gabel	Electromechanical Energy Conversion Devices	CA	Award	103
207	Frank L Anderson	Glass Sheet Manufacturing Method	WV	Analysis	104
208	Norman C Fawley	Fuel Transport Modules	CA	Award	104
209	John W Yount	Reclaiming Process for Resin Treated Fiberglass	NC	Award	105
210	Lloyd Flatland	Ultra High Speed Drilling Device	CA	Award	105
211	Robert F Evans	Shock Mounted Stratapax Bit	TX	Award	106
212	Louis E Govear	Water Warden	CA	Complete	106
213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe	MI	Analysis	107
214	Donald E Wise	Convertible Flat/Drop Trailer	OR	Award	107
215	Richard Jablin	Slag Waste Heat Boiler	NC	Decision Phase	108
216	Richard F Kiley	Semiconductor Element Mounting	MA	Award	108
217	Curtis J Tanner	Jointless Tape for Oil Well Pumps	CA	No DOE Support	109
218	Wilford Dean Tannehill	Behemoth	TX	Other Assistance	109
219	Thomas M Meshbesher	Method for Making Acetaldehyde from Ethanol	DE	Award	110
220	Charles A Schwartz	Deep Throat Resistance Welder	OH	Award	110
221	Rudolf O Iverson	Strainercycle	NY	Other Assistance	111
222	Donald R Thomas	Louver Trombe Solar Storage Unit	VT	Other Assistance	111
223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ	CO	Award	112

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224	Jack D Haile (Dec'd)	Haile Alternate Fuel Grain Dryer	NE	Award	112
225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System	FL	Analysis	113
226	Stewart Ryan	An Electronic Leak Detecting System	OK	Analysis	113
227	Norman C Fawley	CRM Pipe	CA	Award	114
228	Meredith C Gourdine	EGD Fog Dispersal System	NJ	Procurement	114
229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism	IL	Analysis	115
230	Donald C Erickson	Absorption Heat Pump	MD	Award	115
231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions	NM	Award	116
232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin	MI	Award	116
233	Daniel A Lockie	Mounted Steerable Ripper	CA	No DOE Support	117
234	Douglas E Wood	Geodesic Solar Paraboloid	WA	Award	117
235	Jay E Ort	Single Stage Anaerobic Digestion Process	PA	Award	118
236	Ronald E Brandon	Steam Turbine Packing Ring	NY	Award	118
237	David E Hicks	Hicks Alter-Brake System	CO	Award	119
238	Harry E Wood	Clothes Dryer Automatic Shut-Off	LA	Award	119
239	Jack Winnick	Desulfurizing Gas Mixtures	GA	Award	120
240	Jay R Royston	All Steam Heated Sadiroon for Commercial Use	CA	No DOE Support	120
241	Richard J Gay	Polysulfide Oil Field Corrosion Control System	TX	Award	121
242	Donald Shuler	New Petersburg Beam Trawl	AK	Award	121
243	Edward J Sommer, Junior	Aluminum Rich Concentrate from Municipal Waste	TN	Complete	122
244	Charles E Robinson	CHARLIE	CO	Award	122
245	Thomas Neil Parker, Junior	Improved Oil Well Pumping Unit	OK	Award	123
246	Juan M Garcia, Junior	Maximum Cruise Performance	CA	Analysis	123
247	Nathan Cohn	Improved Control of Bulk Power Transfers	PA	Award	124
248	Thorvald G Granryd	Dyna-Bite Traction Intensifier	IL	Award	124
249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells	TX	Award	125
250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil	NC	Analysis	125
251	Victor R Thayer (Dec'd)	Low Energy Distillation Process	DE	Analysis	126
252	William C Whitman	Thermal Bank	NJ	Award	126
253	Anthony Peters	High Performance Heat Pump	NJ	Award	127
254	Daniel Douenias	"Turbo-Glo" Immersion Furnace	NY	Award	127
255	Arthur F Stone	Method and Apparatus for Scrubbing Gas	NJ	Decision Phase	128
256	Evert S Green	Plant Irrigation Method	NY	Other Assistance	128
257	Richard H Baasch	Method and Apparatus for Melting Snow	NE	Award	129
258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool	TX	Award	129
259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe	CA	Award	130

DOE Number -----	Inventor Name -----	Invention Title -----	State or Country -----	Status -----	Page -----
260	Edward S Kress	Method and Apparatus for Handling and Dry Quenching Coke	IL	Award	130
261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete	PA	Other Assistance	131
262	Kai-Chih Chang	Energy Saving Pump and Pumping System	WA	Award	131
263	William Tunderman	Method for Reconditioning Rivetless Chain Links	IL	Other Assistance	132
264	Donald F Othmer	Desulfurization of Coal	NY	Award	132
265	John W Richardson	Liquid Treatment for Growing Vegetation	LA	Award	133
266	Dan Egosi	Energy Conversion Method	Israel	Other Assistance	133
267	Shang-I Cheng	Gasification of Coal and Solid Wastes	NJ	Award	134
268	Harold T Sawyer	Apparatus for Enhancing Chemical Reactions	CA	Analysis	134
269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus	TX	Analysis	135
270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment	WA	Award	135
271	William B Retallick	Hydrogen Storage System	PA	Award	136
272	Robert M Roeglin	V-Plus System	WI	Procurement	136
273	Julius Czaja	Open Cycle Latent Heat Engine	NY	Analysis	137
274	Nathan E Passman	Flexible Lighting	IL	Analysis	137
275	Don E Avery	Low Head - High Volume Pump	HI	Analysis	138
276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy	PA	Award	138
277	Guy C Dempsey	Electronic Conveyor Control Apparatus	VA	Analysis	139
278	James M Stewart	Complete System for Large Solar Water Heating and Storage	SC	Award	139
279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops	FL	Award	140
280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination	OK	Award	140
281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator	CA	Award	141
282	Eugene Tippmann	Insulated Siding	IN	Award	141
283	Tom Atterbury	Aluminum Roofing Chips	OH	Award	142
284	Anthony N Fresco	Atomized Oil-Injected Rotary Screw Compressors	NY	Procurement	142
285	Hermann Ernst	Ring Seals for Railroad Axle Bearings	MN	Analysis	143
286	Montaz N Mansour	Use of Pulse-Jet for Atomization of CWM	MD	Analysis	143
287	Don J Marshall	Automatic Variable Pitch Marine Propeller	MD	Award	144
288	Norman L Dickinson	DIPAC and MODIPAC	CA	Analysis	144
289	Marc S Caspe	An Earthquake Barrier	CA	Analysis	145
290	Jerry Aleksandrow	Low Energy Ice Making Apparatus	IL	Analysis	145
291	Jerry Tagtaglino	Selective Zone Isolation for HVAC System	TX	Analysis	146
292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells	MD	Award	146
293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings	OK	Analysis	147
294	Carl L Sterner	Highway Power Patcher	CA	Award	147

DOE Number -----	Inventor Name -----	Invention Title -----	State or Country -----	Status -----	Page -----
295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance	MA	Award	148
296	Raymond Hunter	Shower Bath Economizer	TN	Analysis	148
297	E M Talbott	Series (Two-Wire) V-Controller	MD	Award	149
298	David L Swartz	Three/Tenths Degree Kelvin Closed Cycle Refrigeration System	OH	Decision Phase	149
299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column	TX	Analysis	150
300	James McArthur	Casing Stabbing Apparatus	OK	Analysis	150
301	Don E Avery	Pump Control System for Windmills	HI	Analysis	151
302	John H Burk	Rock Impact Breakers	CA	Analysis	151
303	Nicholas Archer Sanders	Battery Heating Device	VT	Decision Phase	152
304	Deborah D Chung	Exfoliated Graphite Fibers	PA	Analysis	152
305	Harold L Bowman	Automatic Filter Network Protection	AR	Analysis	153
306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings	NY	Analysis	153
307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuselages	CA	Analysis	154
308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process	IN	Analysis	154
309	Robert N Rose	Process of Smelting with Submerged Burner	CT	Analysis	155
310	Robert M Hunter	Portable Wastewater Flow Metering Device	WA	Analysis	155
311	Herbert D Easterly	Auxiliary Truck Heater	TN	Analysis	156
312	Ray L Jones	The "Jones AWT"	CA	Analysis	156
313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units	PA	Analysis	157
314	Max Klein	Filter Apparatus	MA	Analysis	157
315	Ralph A Messing	Method of Processing Biodegradable Organic Material	NY	Analysis	158
316	George B Clark	Thrust Impact Rock Splitter	MO	Analysis	158
317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell	OH	Analysis	159
318	Louis A Joo	Bi-Polar Electrode for Hall-Heroult Electrolysis	TN	Analysis	159
319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream	MA	Analysis	160
320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling	NJ	Analysis	160
321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale	CO	Analysis	161
322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control	OK	Analysis	161
323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material	OR	Analysis	162
324	Gene S Cox	Foliar Fertilization Process	MO	Analysis	162
325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting	MI	Analysis	163

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DOE # 1 DOE Coordinator G. K. Ellis Contact: Murray G Lowenthal

OERI # 19 DOE Program Off: CE

Category: Miscellaneous

Title: Demand Metering System for Electric Energy

Inventor: Willard Graves

Patent # 3 683 343

State/Country: MD

Company: Environmentrics, Inc.

Description: The invention provides a means whereby a consumer's electric meter can be adjusted by the electric company to run at a faster rate at times of greater loads upon the utility system -- load leveling.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 23, 1975 Decision Date: Jul 7, 1977

Received by DOE from NBS: Feb 12, 1976

Status: No DOE Support

Development Stage: Concept Development

Summary: No area of appropriate DOE support could be identified.

=====

DOE # 2 DOE Coordinator G. K. Ellis Contact: Rita Paleschuck

OERI # 100 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Fuel Miser

Inventor: Rita Paleschuck

State/Country: NY

Company: Flair Mfg. Corp.

Description: The device is an attachment which can be used to retrofit a room thermostat with a synchronous motor-driven clock timer and an auxiliary heating element to enable it to have a temperature set-back cycle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 14, 1975 Completion Date: Jul 15, 1976

Received by DOE from NBS: Feb 19, 1976

Status: Complete

Development Stage: Production & Marketing

Summary: No research and development required, since the device is on the market. A generic brochure was written and published on the "need for automatic temperature setback." Extensive distribution was accomplished through DOE's Office of Public Affairs "supermarket handout" program and General Services Administration's Consumer Information Center.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	3	DOE Coordinator	D.R.Craig	Contact:	Donald C Erickson
OERI #	3	DOE Program Off:	FE		Director of Research
Category:	Other Natural Sources				Energy Concepts Co.
					1704 South Harbor Lane
					Annapolis MD 21401
					301-266-6521
Title:	Hydrogen Generation from Producer Gas by Oxidation-Reduction of Tin				
Inventor:	Donald C Erickson			Patent Applied For	
State/Country:	MD				
Company:	Energy Concepts Co.				
Description:	A new approach to the generation of tonnage hydrogen from carbonaceous fuels. Two reactions; steam with tin, whereby hydrogen is produced, and the reduction of the tin oxide produced in the first reaction back to tin.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1975 Completion Date: Mar 18, 1981

Received by DOE from NBS: May 21, 1976

Status: Complete Award Amount: \$80,820

Development Stage: Laboratory Test

Summary: A grant of \$80,820 was awarded and completed for the grantee to identify the optimum operating conditions, and to do an economic study. Results showed efficiency less than predicted - which in turn, leads to marginal economics. There is a possibility for improvement with more R & D. Inventor seeking licensee.

=====

DOE #	4	DOE Coordinator	G.K.Ellis	Contact:	Joseph C Yater
OERI #	230	DOE Program Off:	ER		Autumn Lane
Category:	Direct Solar				Lincoln MA 01773
					617-259-8544
Title:	Power Conversion of Energy Fluctuations				
Inventor:	Joseph C Yater			Patent Applied For	
State/Country:	MA				
Company:					
Description:	A solid state device is claimed that can transfer thermal energy into usable electrical power with high efficiency, by cascading large numbers of such circuits.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 18, 1975 Completion Date: Jun 15, 1977

Received by DOE from NBS: Jun 4, 1976

Status: Complete Award Amount: \$40,400

Development Stage: Concept Development

Summary: A grant of \$40,400 was awarded to define an adequate development plan. The plan was received and reviewed. Subsequent review indicated the scheme to be incompatible with present state-of-art of micro-device manufacturing.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	5	DOE Coordinator	G. K. Ellis	Contact:	George C Austin
OERI #	88	DOE Program Off:	CE		Austin Tool Company
Category:	Combustion Engines & Components				2239 North Loma Ave.
					South El Monte CA 91605
					213-442-7338

Title: Diesel Engine Conversion System for Gasoline Engines

Inventor: George C Austin
 State/Country: CA
 Company: Austin Tool Co.

Description: The system is proposed for converting a standard gasoline auto engine into a diesel engine

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 30, 1975 Completion Date: Nov 20, 1978
 Received by DOE from NBS: Aug 12, 1976
 Status: Complete Award Amount: \$18,000
 Development Stage: Engineering Design

Summary: A grant of \$18,000 for a marketing study was awarded, and completed. Significant interest by those surveyed was expressed in the Austin diesel conversion, if they were having their engine rebuilt.

=====

DOE #	6	DOE Coordinator	D. G. Mello	Contact:	Albert B Csonka
OERI #	225	DOE Program Off:	CE		FERRO Technical Co.
Category:	Combustion Engines & Components				109 Larchmont Road
					Buffalo NY 14214
					716-833-3122

Title: Micro-Carburetor

Inventor: Albert B Csonka
 State/Country: NY
 Company: FERRO Technical Company

Patent Applied For

Description: A new kind of carburetor which is claimed to be fuel-saving and pollution-reducing.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 15, 1975 Completion Date: Feb 13, 1980
 Received by DOE from NBS: Aug 17, 1976
 Status: Complete Award Amount: \$193,500
 Development Stage: Engineering Design

Summary: A fixed price development contract of \$193,500 was awarded to build a working micro-carburetor, sized to fit a late model, standard 350 cubic inch V-8 engine. Contract is being administered by Office of Transportation Programs, DOE. Carburetor was tested by NASA's Jet Propulsion Lab and report #JPL 81-75, August, 1981 shows improvements ranging from 9 to 18% over standard carburetor.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 7 DOE Coordinator G. K. Ellis Contact: Len Spelber
Wastemate Corporation
OERI # 387 DOE Program Off: CE 4830 Viewridge Avenue
San Diego CA 92123
Category: Miscellaneous 619-292-3122

Title: Hydraulically Powered Waste Disposal Device

Inventor: David Virley Patent # 3 700 178
State/Country: CA
Company: Wastemate Corporation

Description: The device is to replace conventional food waste disposal units which are powered by electric motors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 10, 1975 Completion Date: Aug 20, 1979

Received by DOE from NBS: Aug 26, 1976

Status: Complete Award Amount: \$28,000

Development Stage: Production & Marketing

Summary: A grant of \$28,000 was awarded and completed for the grantee to prepare a qualified business plan to assist in acquiring the necessary capital funding. The company went public and raised \$1.5 million which was used mainly to buy production tools. The company is now in production. Follow-on financing desired by grantee.

=====

DOE # 8 DOE Coordinator D.G.Mello Contact: Fred Tunmore
Advanced Energy Systems
OERI # 423 DOE Program Off: CE Unit #3, 595 Taylor Way
Belmont CA 94002
Category: Transportation Systems, Vehicles & Components 503-256-1111

Title: Inertial Storage Transmission

Inventor: Vincent E Carman Patent # 3 903 696
State/Country: OR
Company: Advanced Energy Systems Grant # FG01-81CS15069

Description: The device is a system for improving the efficiency and reducing the fuel consumption of a motor vehicle, utilizing a regenerative hydraulic system to store the kinetic energy from deceleration for use in accelerating the vehicle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 12, 1975 Completion Date: Aug 31, 1982

Received by DOE from NBS: Sep 3, 1976

Status: Complete Award Amount: \$49,541 Contract Period:

Development Stage: Prototype Test Jul 21, 1981 - Aug 31, 1982

Summary: A grant of \$49,541 was awarded for final preparation of vehicle to present to EPA for testing. Olsen Corporation has tested the device. Ownership changed recently and financing is at a reputed level of \$3.2 million with 7 employees. Product is available for distribution. Engineering details available from company.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE #	9	DOE Coordinator	D. G. Mello	Contact:	Alvin M Marks
OERI #	151	DOE Program Off:	ER		Marks Polarized Corp.
Category:	Miscellaneous				153-16 Tenth Avenue
					Whitestone NY 11358
					212-767-9600

Title: Heat/Electric Power Conversion via Charged Aerosols

Inventor: Alvin M Marks Patent Applied For
State/Country: NY Grant # EU78-G016225
Company: Marks Polarized Corporation

Description: This device is to convert thermal energy to electric energy without the use of moving parts.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 4, 1975 Completion Date: May 9, 1979
Received by DOE from NBS: Sep 13, 1976
Status: Complete Award Amount: \$50,000
Development Stage: Laboratory Test

Summary: A grant of \$50,000 was awarded to construct and test an Electro Gas Dynamics Generator, and then use this device to investigate the condensation charging of a steam jet. This project was followed by a three year project funded by another DOE program, to build and test a 10kw laboratory model of the device, of which the first year funding was \$199,077. (The company's work force averages 25 people.)

=====

DOE #	10	DOE Coordinator	G. K. Ellis	Contact:	Harrison Robert Woolworth
OERI #	421	DOE Program Off:	CE		International Preheater
Category:	Industrial Processes				P.O. Box #88218
					Tukwila Branch
					Seattle WA 98188
					206-852-1992

Title: Scrap Metal Preheating Method and Apparatus

Inventor: Harrison Robert Woolworth
State/Country: WA
Company: International Preheater

Description: The device provides a means of extracting waste heat from hot ingots and billets and utilizing this waste heat to preheat scrap steel prior to placing it in an electric-arc furnace.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 11, 1975 Completion Date: Oct 23, 1978
Received by DOE from NBS: Sep 29, 1976
Status: Complete Award Amount: \$170,000
Development Stage: Production Engineering

Summary: A grant of \$170,000 was awarded to design and fabricate hardware; and to operate a system, utilizing waste heat for preheating scrap steel, in a working specialty steel mill. A 20% or more energy saving was demonstrated. Steel company interest has developed. Inventor obtained a \$360,000 SBA guaranteed loan, has built an operating unit costing \$500,000 at a steel plant in Knoxville, Tennessee, and has several additional \$500,000 units on order. The company employs three people.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	11	DOE Coordinator	D. G. Mello	Contact:	Ronald H Smith	
OERI #	233	DOE Program Off:	CE		150 Green Street	
					San Francisco	CA 94111
					415-398-6813	

Category: Direct Solar

Title: Solar Collector

Inventor: Ronald H Smith
 State/Country: CA
 Company: Solergy, Inc.

Grant # EM78-G019214

Description: This is a composite extruded aluminum section -- incorporating a cylindrical absorption tube that carries the working fluid. The collector surface is in the form of an Archimedes Spiral and a parabolic curve to maximize the collection angle and eliminate the need to reposition the collector.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 9, 1975 Completion Date: Nov 19, 1980

Received by DOE from NBS: Sep 29, 1976

Status: Complete Award Amount: \$46,884 Contract Period:

Development Stage: Production Engineering May 17, 1978 - Nov 19, 1980

Summary: A grant of \$46,884 was awarded to Solergy, Inc., to initiate a series of marketing studies to determine the attitudes of Western U.S. manufacturers, distributors and designers, regarding prospects for successful installation of passive solar systems in new buildings. Survey results were used by Solergy to aid their marketing and manufacturing plans. Company is now out of business.

=====

DOE #	12	DOE Coordinator	G.K.Ellis	Contact:	Thomas J Russo	
OERI #	448	DOE Program Off:	CE		100 Forest Avenue	
					Staten Island	NY 10310
					212-273-0248	

Category: Buildings, Structures & Components

Title: High Frequency Energy Saving Device

Inventor: Frank R Summa
 State/Country: NY
 Company: Electrides Corp.

Patent Applied For

Description: This invention consists of a high-frequency generator, to excite one of several fluorescent lights, replacing the normal ballast transformer, and allowing the system to operate at substantially higher efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 28, 1975 Completion Date: Dec 31, 1982

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: \$30,000

Development Stage: Engineering Design

Summary: A grant of \$30,000 was awarded to engage the services of Niesi-Fitzmaurice and Associates, Inc., to conduct a marketing study and prepare a preliminary business plan for the purpose of commercializing the technology.

=====

DOE #	13	DOE Coordinator	D. G. Mello	Contact:	Ranendra K Bose	
OERI #	53	DOE Program Off:	CE		6728 Carmen	
					Metairie	LA 70003
					703-524-6209	

Category: Transportation Systems, Vehicles & Components

Title: Anti-Pollution System

Inventor: Ranendra K Bose Patent # 3 861 142

State/Country: LA Grant # EM77-G014222

Company:

Description: This device utilizes a high speed turbine to refine exhaust gases and recirculate the unburned portions of that gas to the engine.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 3, 1975 Completion Date: Jan 3, 1979

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: \$40,000

Development Stage: Limited Production/Marketing

Summary: A grant of \$40,000 was awarded, and a prototype was built and tested. Project goals were met. Final Report was accepted. Inventor plans to seek private assistance for commercialization.

=====

DOE #	14	DOE Coordinator	G K Ellis	Contact:	Daniel J Schneider	
OERI #	146	DOE Program Off:	CE		Route #1, Box #81	
					Justin	TX 76247
					817-430-0174	

Category: Other Natural Sources

Title: Aerodynamic Lift Translator

Inventor: Daniel J Schneider

State/Country: TX

Company:

Description: This device is a wind-activated power generating system intended to provide large power outputs in regions where the prevailing wind direction does not vary appreciably during the year. The device also has application in low-head hydro.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 15, 1975 Completion Date: Jan 11, 1979

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: \$50,000

Development Stage: Production Engineering

Summary: A grant of \$50,000 was awarded to develop performance and cost data for the "Schneider Aerodynamic Power Generator". The inventor is currently pursuing the hydro application, and asked for program assistance in obtaining venture capital. The translator still requires technical development.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	15	DOE Coordinator	D.Mello	Contact:	James L Bullock	
OERI #	393	DOE Program Off:	CE		Suite #403, Minges Building	
Category:	Buildings, Structures & Components				P. O. Box #7151	
					Greenville	NC 27834
					919-752-1138	
Title:	Estacron					

Inventor:	Dante A Raponi	Patent Applied For
State/Country:	NC	
Company:	Estacron International, Inc.	Grant # FG01-79IR10221

Description: Estacron consists of an aggregate of Portland cement, fly ash, stack dust, and polyethylene. It has significant potential as a light-weight and energy-conservative construction material.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 28, 1975 Completion Date: Sep 28, 1979

Received by DOE from NBS: Sep 30, 1976

Status: Complete Award Amount: \$101,388 Contract Period:

Development Stage: Laboratory Test Sep 28, 1979 - Jan 31, 1982

Summary: A grant of \$101,388 was awarded to conduct an application engineering and economic analysis of the material, Estacron, in order to assess its material characteristics and to recommend product applications. Results appear indeterminate. Inventor seeks funding for pilot plant design.

=====

DOE #	16	DOE Coordinator	G. K. Ellis	Contact:	John W Bruce	
OERI #	486	DOE Program Off:	CE		West Highway, #16	
Category:	Industrial Processes				Mitchell	SD 57301
					605-996-8335	
Title:	Method and Apparatus for Vacuum Drying of Commodities					

Inventor:	John W Bruce	Patent # 3 914 874
State/Country:	SD	
Company:		

Description: This invention describes a new method of drying commodities, primarily applicable to such grains as corn, rice, and soybeans, by alternately exposing the commodities to dry heated air and to a vacuum.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 10, 1975 Completion Date: Mar 30, 1981

Received by DOE from NBS: Nov 30, 1976

Status: Complete Award Amount: \$52,917

Development Stage: Engineering Design

Summary: A grant of \$52,917 was awarded to design, fabricate, and demonstrate a device for efficiently drying agriculture commodities. The Montana Energy and MHD Development Institute is managing the technical aspects of the program. In addition, the inventor received \$32,000 to dry whey from a private sector source. Results from all tests appear indeterminate. Inventor is interested in selling or licensing patent rights and has ceased work on the technology.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	17	DOE Coordinator	D. G. Mello	Contact:	David W. Doyle, V.P.	
OERI #	619	DOE Program Off:	CE		InterTechnology Corp.	
Category:	Other Natural Sources				100 Main Street	
Title:	Osmotic-Hydro Power Generation				Warrenton	VA 22186
					-	-

Inventor:	David W Doyle	Patent Applied For
State/Country:	VA	
Company:	InterTechnology Corp.	Grant # EG77-G014066

Description: The invention uses a reverse osmosis to produce high pressure liquid that can subsequently be passed through a hydraulic turbine to produce electric power.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 21, 1976 Completion Date: May 1, 1978

Received by DOE from NBS: Jan 14, 1977

Status: Complete Award Amount: \$48,950 Contract Period:

Development Stage: Laboratory Test Aug 11, 1977 - May 1, 1978

Summary: A grant of \$48,950 was given for research and development of membranes suitable for use in a "Osma-Hydro Power" system. Studies included membrane long-term effects, polarization dilution, and concentration. The research was judged as high quality by the cognizant DOE program office.

=====

DOE #	18	DOE Coordinator	G.K.Ellis	Contact:	G R Fitterer	
OERI #	177	DOE Program Off:	CE		P.O. Box #206	
Category:	Industrial Processes				Oakmont	PA 15139
					412-828-0233	

Title: The Control of the Analysis of Low Carbon Aluminum Steels
Using Oxygen Sensors and Iron-Aluminum Alloy

Inventor:	G R Fitterer	Patent # 3 773 641 & Others
State/Country:	PA	
Company:	Fitterer Engineering Assoc., Inc.	

Description: The production of Al "killed" steel is intended to be controlled by the use of Fe-Al alloys instead of Al and by the use of oxygen probes to control the amounts of Al or oxygen in the melt.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 1, 1975 Completion Date: Sep 14, 1978

Received by DOE from NBS: Jan 31, 1977

Status: Complete Award Amount: \$99,600

Development Stage: Production & Marketing

Summary: A grant of \$99,600 was awarded for a system to conserve energy by monitoring and controlling the amount of oxygen in a low carbon aluminum killed steel melt. The system was highly successful. On basis of the success, the steel company involved has initiated a research effort to apply the technology to other ferro melts. The technology is reported to have saved a steel company, doing \$18 million/yr business from bankruptcy.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	19	DOE Coordinator	D.R.Craig	Contact:	Clair H Reinbergen, Pres.	
OERI #	205	DOE Program Off:	CE		C. P. Chemical Co., Inc.	
Category:	Buildings, Structures & Components				25 Home Street	
					White Plains	NY 10606
					914-428-2517	
Title:	Phenol Methalol Foam Rigid Board Insulation					

Inventor: Walter J Hasselman, Jr
State/Country: NY
Company: C. P. Chemical Co., Inc.

Patent Applied For

Description: This invention is a urea-formaldehyde phenol methalol modified form insulating board material. Properties are similar to others on the market except for its fire retardancy and the low toxicity of its combustion products.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 18, 1975 Completion Date: Sep 13, 1978

Received by DOE from NBS: Feb 4, 1977

Status: Complete Award Amount: \$29,900

Development Stage: Limited Production/Marketing

Summary: A one-year grant of \$29,900 was awarded to study physical properties of proprietary insulating material, and to determine the optimum ratios of base chemicals. The result was a product which maximizes insulating properties while minimizing costs. EPA banning of formaldehyde led to new product that eliminates formaldehyde without sacrificing performance. Court decision on Dec 9, 1982 overruled CPSC regulation, permitting sales. Production facility ready to begin production.

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DOE #	20	DOE Coordinator	D. G. Mello	Contact:	Thomas P Hopper	
OERI #	839	DOE Program Off:	CE		103 Old Loudon Road	
Category:	Buildings, Structures & Components				Concord	NH 03301
					603-225-7554	
Title:	Thermal Shade					

Inventor: Thomas P Hopper
State/Country: NH
Company: Insulating Shade Co.

Patent Applied For
Grant # EM78-GD14268

Description: The device is a multi-layer window shade to be fitted to conventional windows and to retract into a small space -- uses reflective surface coatings and with dead air spaces between the layers to reduce heat transfer.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 26, 1976 Completion Date: Jan 6, 1979

Received by DOE from NBS: Feb 28, 1977

Status: Complete Award Amount: \$50,707 Contract Period:

Development Stage: Production Engineering May 17, 1978 - Jan 6, 1979

Summary: A grant of \$50,707 was awarded for the investigations and research of sheet material, seal configurations, and assemblies with third party testing. In addition, marketing assistance was supplied by MIT Innovation Center. Product is now being market tested. It is available for licensing. Last reported sales of \$20,000 per month with 40 people working 2 shifts. Similar devices are being sold by other companies.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	21	DOE Coordinator	G. K. Ellis	Contact:	Robert S Norris
OERI #	613	DOE Program Off:	CE		Energy Conservation Systems
Category:	Industrial Processes				10 Starboard Way - Box #472
					West Dennis MA 02670
					617-398-3430
Title:	Waste Oil Utilization System				

Inventor: Robert S Norris
State/Country: MA
Company: Energy Conservation Systems

Patent # 3 002 826 & Others

Description: This invention would utilize existing emulsification machinery to add a mixture of used lubricating oil and water to fuel oil used in large power plant boilers. Key point is the use of existing additives in fuel oil to prevent boiler tube deposits.

Significant Dates, Status and Summary of Developments:

Form 1D19 Rec'd by NBS: Aug 25, 1975 Completion Date: Mar 30, 1981

Received by DOE from NBS: Feb 28, 1977

Status: Complete Award Amount: \$50,000

Development Stage: Production & Marketing

Summary: A grant of \$50,000 was awarded for the purpose of a market survey for use of waste automotive crankcase lubricating oil as a fuel additive to prevent boiler tube deposits, augment energy availability, and minimize environmental pollution. Utility plants, the prime potential user, were found to have little incentive to purchase the cheaper additive. Product available for licensing.

=====

DOE #	22	DOE Coordinator	D. G. Mello	Contact:	Herbert G Lehmann
OERI #	537	DOE Program Off:	CE		
Category:	Buildings, Structures & Components				
Title:	Fuel Burner Attachment				

Inventor: Herbert G Lehmann
State/Country: CT
Company:

Description: Device to reduce oil consumption by introducing air to oil stream of the burner.

Significant Dates, Status and Summary of Developments:

Form 1D19 Rec'd by NBS: Dec 29, 1975 Decision Date: Sep 19, 1977

Received by DOE from NBS: Feb 28, 1977

Status: No DOE Support

Development Stage: Laboratory Test

Summary: The inventor had his device tested without DOE funding by a private contractor and advised DOE that these tests demonstrated his device to be unsuccessful and that he is withdrawing his device from DOE consideration.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 23 DOE Coordinator D. G. Mello Contact: James E Luber

OERI # 951 DOE Program Off: CE

Category: Other Natural Sources

Title: Microgas Dispersions

Inventor: Int'l MGD Companies

Patent # 3 900 420

State/Country: MI

Company: Int'l MGD Co.

Description: Device consists of a motor, pump, bubble machine, and valves, uses #2 fuel oil, compressed air, surfactant, to maintain bubbles. Resulting mixture burns like natural gas, which burner can use interchangeably, thereby allowing industrial burners to switch fuels. Can also use small amounts of coal dust in the mixture.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 22, 1975 Decision Date: Oct 24, 1978

Received by DOE from NBS: Mar 28, 1977

Status: No DOE Support

Development Stage: Laboratory Test

Summary: Brookhaven National Laboratory agreed to test the burner but advised on June 17, 1977, that they were unable to contact the inventor. An attorney representing the company stated in a letter dated November 10, 1977, that he wished to delay all actions until January 1978 pending resolution of patent related negotiations. On October 24, 1978, DOE advised inventor that support was terminated due to lack of response to repeated inquiries.

=====

DOE # 24 DOE Coordinator G. K. Ellis Contact: Drew W Morris

OERI # 819 DOE Program Off: CE - -

Category: Industrial Processes

Title: Can and Bottle Crushing Apparatus

Inventor: Drew W Morris

Patent Applied For

State/Country:

Company: Drew-it-Corp.

Description: The invention consists of a portable trailer-mounted device for crushing cans and bottles thereby increasing the density of the scrap, making handling more efficient.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 22, 1976 Completion Date: May 7, 1981

Received by DOE from NBS: Mar 30, 1977

Status: Complete Award Amount: \$35,000

Development Stage: Production Engineering

Summary: A grant of \$35,000 was awarded to construct and operate five mobile can-and-bottle crushers, and assemble data on the machine's efficiency and reliability. No final report has been received. DOE unable to locate the inventor.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	25	DOE Coordinator	D.R.Craig	Contact:	Donald C Erickson	
OERI #	2	DOE Program Off:	FE		Energy Concepts Co.	
Category:	Industrial Processes.				1704 South Harbor Lane	
					Annapolis	MD 21401
					301-266-6521	

Title: Sulfur Removal from Producer Gas-High Temperature

Inventor: Donald C Erickson
 State/Country: MD
 Company: Energy Concepts Company

Grant # FG01-81CS15059

Description: The concept envisions the removal of hydrogen sulfide from a high temperature "reducing gas" stream using two scrubbing stages in series, a molten carbonate salt bath and a molten copper bath, each complete with a continuous regeneration cycle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1975 Completion Date: Jul 9, 1983

Received by DOE from NBS: Apr 6, 1977

Status: Complete Award Amount: \$91,032 Contract Period:

Development Stage: Laboratory Test Jul 9, 1981 - Jul 9, 1983

Summary: An award of \$91,032 was given to conduct a research program to establish the technical and economic feasibility of a hot fuel gas desulfurization. Inventor has been successful in generating \$4 million follow-on financing on this and DOE #3. This project has been completed.

=====

DOE #	26	DOE Coordinator	D. G. Mello	Contact:	Seymour Jarmul	
OERI #	782	DOE Program Off:	CE		96 Windsor Gate	
Category:	Miscellaneous				North Hills	NY 11040
					516-365-9886	

Title: Compact Energy Reservoir

Inventor: Seymour Jarmul
 State/Country: NY
 Company:

Grant # EU78-G016499

Description: A room-heating convector which stores energy in eutectic salts and radiates the heat to the room under thermostatic control.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 17, 1976 Completion Date: Oct 26, 1979

Received by DOE from NBS: Apr 12, 1977

Status: Complete Award Amount: \$20,740 Contract Period:

Development Stage: Prototype Test Aug 2, 1978 - May 2, 1979

Summary: A grant of \$20,740 was awarded for a 9 month project. Inventor designed, constructed and functionally tested a prototype CER suitable for heating a 375 sq.ft. room in a well-insulated house similar to Solar One at the University of Delaware. DOE decided it was not necessary to subsequently subject the device to quantitative tests. A qualitative assessment was given to the inventor for his consideration.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 27 DOE Coordinator D. G. Mello Contact: R J Jones
2772 Salmon Drive
OERI # 1205 DOE Program Off: CE Los Alamitos CA 90720
213-721-2641
Category: Buildings, Structures & Components
Title: Waste Heat Utilization for Commercial Cooking Equipment

Inventor: R J Jones Patent # 4 084 745
State/Country: CA
Company: Hydrocoil Corporation, Inc. Grant # EM78-G031852

Description: Waste heat utilization for commercial cooking equipment to recover some of the energy in such a way as to avoid interaction with grease vapors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 13, 1976 Completion Date: Mar 25, 1980

Received by DOE from NBS: Apr 14, 1977

Status: Complete Award Amount: \$65,000 Contract Period:

Development Stage: Limited Production/Marketing Feb 1, 1978 - Mar 25, 1980

Summary: A grant of \$65,000 for a 9 month project was awarded. Inventor fabricated two production-ready Hydrocoils: one for water, one for air. Calspan Corporation conducted a series of tests. Research facility of American Gas Association evaluated and provided a comprehensive engineering report. Results of Fall '78 AGA tests proved that unit operates as expected. At last report, inventor had sold three products. Technology is available for licensing.

=====

DOE # 28 DOE Coordinator D. G. Mello Contact: Gilbert W Didion
OERI # 161 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Ultraflo

Inventor: Gilbert W Didion Patent # 3 668 884
State/Country: OH
Company: Ultraflo Corporation

Description: Ultraflo, a hot water energy-saving system for buildings, is a water delivery system controlling temperature and flow by switches, low voltage current, and solenoid valves.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 30, 1975 Completion Date: Oct 24, 1978

Received by DOE from NBS: Apr 27, 1977

Status: Complete

Development Stage: Limited Production/Marketing

Summary: The invention was tested in California under DOE mission program auspices. The same program provided the inventor with an opportunity for publicizing the technology in a marketing project in Denver in 1977. Inventor has obtained \$160,000 in private financing and an additional \$200,000 from Federal contracts. Product is now being marketed with limited success.

Inventions Recommended for DOE Consideration by NBS/ OERI - A Brief Status Report

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DOE #	29	DOE Coordinator	D. G. Mello	Contact:	Kenneth E Mayo
OERI #	800	DOE Program Off:	CE		Tuned Sphere Intl., Inc
Category:	Fossil Fuels				111 Lock Street
					Nashua NH 03060
Title:	Tuned Sphere Stable Ocean Platforms				

Inventor: Kenneth E Mayo Patent # 3 837 308 & Others
 State/Country: NH
 Company: Tuned Sphere International, Inc.

Description: This invention presents a unique design approach for an ocean platform, by which the body's natural tendency to roll with wave excitation is diminished or offset.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 18, 1975 Completion Date: Feb 6, 1979

Received by DOE from NBS: May 10, 1977

Status: Complete Award Amount: \$90,000 Contract Period:

Development Stage: Prototype Test Sep 30, 1977 - Jun 30, 1978

Summary: An award of \$90,000 was granted for a nine (9) month study program to test vessel models, list pertinent parametric data, produce motion picture evidence of vessel stability, and provide reduced graphical data. Completion date was extended to August 1978, at no cost to allow for extension of tank tests and subsequent data reduction. Final report has been received and accepted. Company obtained an additional \$200,000 from R & D sales.

=====

DOE #	30	DOE Coordinator	G. K. Ellis	Contact:	Ken Walmer
OERI #	482	DOE Program Off:	FE		AEL-EMTEC Corp.
Category:	Industrial Processes				P.O. Box #507
					Lansdale PA 19446
Title:	Method of Removing Sulfur Dioxide from Flue Gases				

Inventor: Leopold Pessel (Deceased) Patent Applied For
 State/Country: PA
 Company: AEL-EMTEC Corp.

Description: Embodies the scrubbing of flue gases with an aqueous solution of metal salt.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 8, 1975 Completion Date: Mar 1, 1983

Received by DOE from NBS: May 17, 1977

Status: Complete Award Amount: \$94,150

Development Stage: Laboratory Test

Summary: A grant of \$94,150 was awarded to 1) conduct a laboratory-scale testing program to further clarify the basic chemical reactions of the process in controlled but realistic environments, and 2) to provide background material for an economic analysis of the process. The results appear promising. Now, with the death of the inventor, technology is available for licensing or outright sale.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	31	DOE Coordinator	G.K.Ellis	Contact:	Richard E Engdahl
OERI #	275	DOE Program Off:	CE		Deposits and Composites, Inc.
Category:	Combustion Engines & Components				318 Victory Drive
					Herndon VA 22070
					703-471-9310
Title:	Ceramic Rotors and Vanes				
Inventor:	James C Withers				
State/Country:	VA				
Company:	Deposits and Composites, Inc.			Grant #	FG01-85CE15214
Description:	Technique for fabricating turbine rotors that will operate at high temperatures, thereby making it possible to operate at higher efficiencies.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Sep 19, 1975	Award Date:	Apr 15, 1985
Received by DOE from NBS:	May 24, 1977		
Status:	Award	Award Amount:	\$131,250
		Contract Period:	
Development Stage:	Engineering Design		May 24, 1978 -

Summary: A grant (\$62,500 for each of two years) was awarded for the grantee to conduct a research program designed to improve the material properties of his Chemical Vapor Deposition (CVD) material for use in energy-related applications. A variety of Chemical Vapor Deposition products are resulting. Entrepreneur is interested in licensing and/or forming and financing R & D limited partnerships. DOE inventions program is assisting by identifying financial resources. An additional \$6,250 was awarded on April 15, 1985.

=====

DOE #	32	DOE Coordinator	D.R.Craig	Contact:	John C Calhoun, President
OERI #	1174	DOE Program Off:	CE		Forest Fuels, Inc.
Category:	Fossil Fuels				P.O. Box #207
					Antrim NH 03440
					603-876-3353
Title:	Wood Gas Reactor				
Inventor:	Robert A Caughey			Patent Applied For	
State/Country:	NH				
Company:	Forest Fuels, Inc.				

Description: The device produces a fuel gas from wood suitable for use in existing gas or oil-fired combustion equipment.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Aug 9, 1976	Completion Date:	Mar 16, 1981
Received by DOE from NBS:	May 26, 1977		
Status:	Complete	Award Amount:	\$49,405
Development Stage:	Prototype Development		

Summary: A grant of \$49,405 was awarded and completed, to design and build a gasifier system to produce gaseous fuel from biomass. The unit is being used to demonstrate the practical use of alternate fuels in existing industrial boiler installations, and is in demonstration service at Forest Fuel Technical Center in Antrim, NH. About 30 units sold at \$100,000 to \$200,000 each as of Nov, 1982. The business is reported to be successful and employs twenty-five.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 33 DOE Coordinator D. G. Mello Contact: Joseph B Vogt
 5391 Ostrum Road
 OERI # 905 DOE Program Off: CE Attica MI 48412
 313-724-0106
 Category: Buildings, Structures & Components
 Title: Temperature Indicating Device

Inventor: Joseph B Vogt Patent Applied For
 State/Country: MI Grant # FGD1-79IR10272
 Company:
 Description: Device to identify malfunction of steam trap.

Significant Dates, Status and Summary of Developments:

Form 1D19 Rec'd by NBS: Apr 19, 1976 Completion Date: Aug 23, 1980

Received by DOE from NBS: May 31, 1977

Status: Complete Award Amount: \$10,135 Contract Period:

Development Stage: Engineering Design Aug 24, 1979 - Aug 23, 1980

Summary: A one year grant of \$10,135 was awarded to conduct an engineering development project to test and improve the operation of the inventor's temperature monitoring device. Inventor determined that there is no market for his product.

=====

DOE # 34 DOE Coordinator T.A.Coultras Contact: Ron Davies
 4261 Howard Avenue
 OERI # 1588 DOE Program Off: CE Kensington MO 20795
 301-595-5252
 Category: Buildings, Structures & Components
 Title: Delphic Thermogenic Paint (Heat Film)

Inventor: Hal Ellis Patent # 3 923 697 & Others
 State/Country: FL Grant # FGD1-82CE15147
 Company: Thermal Ventures, Inc.
 Description: A thin conductive paint containing crystalline graphite and pigments bonded to a surface such as Mylar with parallel bussbar connections to 120/220v AC to be used as radiant heating.

Significant Dates, Status and Summary of Developments:

Form 1D19 Rec'd by NBS: Nov 11, 1976 Completion Date: Mar 31, 1983

Received by DOE from NBS: Jun 16, 1977

Status: Complete Award Amount: \$25,000 Contract Period:

Development Stage: Production & Marketing Sep 30, 1982 - Mar 31, 1983

Summary: A grant of \$25,000 was awarded to verify the claim that radiant heating allows air temperature to be significantly lower than by convection heating, thus reducing building heat losses with no loss in occupant comfort. An advisory group was formed to determine if additional experiments are required. The results were inconclusive, and no experiments are planned. Existing analysis methods seem adequate. The company has raised \$4.5 million through public offering, another \$6.2 million by private ventures, employs 50, and has sales to date of \$2.3 million.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 35 DOE Coordinator D. G. Mello Contact: Gulab Chand Jain

OERI # 336 DOE Program Off: CE

Category: Direct Solar

Title: Utilization of Solar Energy by Solar Pond System

Inventor: Gulab Chand Jain

State/Country: India

Company: M/S Metro Rubber Works

Description: The proposal is for a solar pond demonstration plant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 23, 1975 Decision Date: Dec 12, 1977

Received by DOE from NBS: Jun 23, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: Program has declined support of this invention because the inventor's proposal does not respond to several significant problems which are inherent in the system.

=====

DOE # 36 DOE Coordinator D. G. Mello

Contact: Richard P Gingras
41 Kenoria Avenue
Danbury CT 06810
203-792-8877

OERI # 1283 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Computerstat

Inventor: Richard P Gingras

Patent Applied For

State/Country: CT

Company: Dynamic Electronic Control Inc.

Grant # EM78-G014208

Description: Computerstat is a computerized thermostat set-back device that appears to be more energy-conserving than a conventional clock-thermostat.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 4, 1976 Completion Date: Sep 1, 1979

Received by DOE from NBS: Jun 24, 1977

Status: Complete

Award Amount: \$65,000

Contract Period:

Development Stage: Engineering Design

Feb 24, 1978 - Sep 1, 1979

Summary: Program office awarded a grant of \$65,000 to build, test, and demonstrate the energy saving potential of a microprocessor controlled thermostat designed for use in residential and small commercial buildings. Grant also included the design of a computer program to simulate operation in a small commercial building. Company subsequently has gone bankrupt. Concept is now advertised by several companies.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 37 DOE Coordinator T.A.Coultras Contact: Lawrence E Bissell

OERI # 565 DOE Program Off: CE

Category: Miscellaneous

Title: Hotwater Engine

Inventor: Lawrence E Bissell
State/Country: CA
Company:

Patent Applied For

Description: The proposal is for the production of mechanical power from low grade heat.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 2, 1976 Decision Date:

Received by DOE from NBS: Aug 5, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: The DOE program office recommended that the Inventor be assisted by providing a specialized, highly sophisticated computer analysis of his device. ERIP requested a proposal to this effect, in October, 1977. To date there has been no response from the inventor indicating the type of device he would like tested, nor giving any specification or goals for the development.

=====

DOE # 38 DOE Coordinator D. G. Mello Contact: John McCallum
5926 Beechview Drive
OERI # 558 DOE Program Off: FE Worthington OH 43085
614-885-8416

Category: Industrial Processes

Title: Reduction Volatilizations

Inventor: John McCallum
State/Country: OH
Company:

Grant # EU78-GD16594

Description: The purpose of this invention is to produce volatile gases, liquids, and combustible coke, by passing pulverized coal through a eutectic molten metal bath of lead and sodium.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 2, 1976 Completion Date: Jul 1, 1979

Received by DOE from NBS: Aug 11, 1977

Status: Complete Award Amount: \$49,740 Contract Period:

Development Stage: Prototype Development Aug 28, 1978 - Apr 20, 1979

Summary: A grant of \$49,740 was awarded and completed for a 5 month experiment program to study chemical reactions of the process, measure all variables, outline plan for design of prototype plant and examine economic feasibility or large scale production. Ohio State University was the sub-contractor. Final report suggests that process is not economically feasible at this time.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 39 DOE Coordinator G. K. Ellis Contact: James H Lawler

OERI # 219 DOE Program Off: FE

Category: Fossil Fuels

Title: Lawler Steam Generator and Lawler System of Thermal Oil Recovery

Inventor: James H Lawler

Patent # 3 543 732

State/Country: CA

Company:

Description: A small, high pressure, high temperature, mobile steam generator which can be economically operated at an oil well installation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 29, 1975 Decision Date: Feb 1, 1979

Received by DOE from NBS: Aug 18, 1977

Status: No DOE Support

Development Stage: Engineering Design

Summary: On Feb. 1, 1979, the inventor was advised that DOE would not support his invention as it represented no advance in the state-of-the-art, and because having sold his equipment, he no longer had it available for test.

=====

DOE # 40 DOE Coordinator G. K. Ellis Contact: Roland P Soule

OERI # 734 DOE Program Off: FE

Category: Other Natural Sources

Title: Improved Equipment and Process for Production of Blue Water Gas

Inventor: Roland P Soule

State/Country: NY

Company:

Description: The main features of the invention are to use automatic valves for controlling the blue gas process, a square reactor bed with a rotating grate which will give positive ash removal -- all of which permits a faster cycling between the "run" and the "blow" of the process.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 8, 1976 Decision Date: Jun 12, 1981

Received by DOE from NBS: Aug 18, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: No feasible method of DOE support could be identified. Various options were considered, and several tentative expressions of interest from others were made known to the inventor. He declined each of them. In his mid-eighties, he was not interested in personally pursuing the development. Nor was he interested in dealing with a small company. Also, he disagreed upon the need for establishing economic and technical feasibility.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 41 DOE Coordinator D. G. Mello Contact: William F Armitage Jr
OERI # 58D DOE Program Off: CE
Category: Direct Solar
Title: Fabrication of Photovoltaic Devices by Solid Phase Growth of
Semi-conductors from Metal Layers
Inventor: William F Armitage, Jr.
State/Country: MA
Company:
Description: The purpose of the invention is to provide a more efficient and economical
process for fabricating solar cells.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 12, 1976 Decision Date: Nov 7, 1978
Received by DOE from NBS: Aug 30, 1977
Status: No DOE Support
Development Stage: Concept Development

Summary: Inventor failed to respond to repeated requests for an unsolicited proposal.

=====

DOE # 42 DOE Coordinator D.R.Craig Contact: Everett Millard
OERI # 347 DOE Program Off: CE 403D Irving Park Road
Chicago IL 60641
312-777-4030
Category: Buildings, Structures & Components
Title: Flue Baffle Assembly
Inventor: Everett Millard
State/Country: IL
Company: Temperature Heating Control Systems

Description: The invention is a baffle device to be inserted in hot air passage of old,
solid fuel-burning furnaces that have been converted to oil. The device
increases heat transfer and reduces fuel gas temperature, thereby saving fuel.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 3, 1975 Completion Date: Sep 8, 1979
Received by DOE from NBS: Sep 23, 1977
Status: Complete Award Amount: \$30,000
Development Stage: Limited Production/Marketing

Summary: A grant of \$30,000 was awarded and completed, to perform a six-task study and survey
of existing coal fired heating systems that have been converted to oil and which may
be modified profitably to accept the inventor's energy-saving flue baffle device.
The survey failed to show a sufficient number of heating systems to warrant
commercialization of the baffle. However, a secondary business developed as a result
of the survey, in which the inventor measures flue gases that form basis for
optimizing air/fuel ratio to save energy.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	43	DOE Coordinator	J. Aellen	Contact:	Sidney A Parker
OERI #	1263	DOE Program Off:	CE		5820 Diamond Oaks Dr., S
Category:	Other Natural Sources				Fort Worth TX 76117
Title:	Thermal Gradient Utilization Cycle				

817-834-5081

Inventor: Sidney A Parker Patent # 3 953 971
State/Country: TX Grant # EU78-C-01-6604
Company: The 21st Century Power Generation Co.

Description: The invention describes a new kind of power plant cycle using low grade, low temperature energy which does not need copious amounts of water for its operation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 23, 1976 Completion Date: Aug 4, 1980

Received by DOE from NBS: Sep 30, 1977

Status: Complete Award Amount: \$40,000 Contract Period:

Development Stage: Limited Production/Marketing Sep 16, 1978 - Jan 15, 1980

Summary: A grant of \$40,000 for one year was given to Mr. Parker, with support from Texas A&M, assessing the technical and economic feasibility of the thermal gradient utilization cycle when applied to selected energy conversion systems. Final report has been received. Inventor will make final report available to others in the trade and DOE.

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DOE #	44	DOE Coordinator	D.R.Craig	Contact:	Leon Lazare
OERI #	1357	DOE Program Off:	FE		81 Willow Street
Category:	Miscellaneous				New Haven CT 06511
Title:	New Working Fluids for Increasing the Cycle Efficiencies of Thermal				

203-776-0256

Inventor: Leon Lazare
State/Country: CT
Company: Puraq Company

Description: The invention is a new type of absorption refrigerator.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 24, 1976 Completion Date: May 1, 1979

Received by DOE from NBS: Sep 30, 1977

Status: Complete Award Amount: \$75,000

Development Stage: Engineering Design

Summary: A grant of \$75,000 was awarded to research a dual-solvent system for heat pump application, and to determine phase relationships and thermodynamic properties of certain specific three-component systems. Grant complete. Equipment failed to confirm theoretical predictions but yielded results which led to another invention which was subsequently funded by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	45	DOE Coordinator	D. G. Mello	Contact:	Joe W Fowler
OERI #	1739	DOE Program Off:	CE		Carolina Thermal Company
Category:	Industrial Processes				Iron Works Road
Title:	Bulk Cure Tobacco Barn with Improvements				Route #2, Box #39
					Reidsville NC 27320
					919-342-0352

Inventor:	Joe W Fowler	Patent Applied For
State/Country:	NC	
Company:	Carolina Thermal Company	Grant # EM78-6014254

Description: The tobacco curing barn is a trailer-like structure that is fitted with a roof-top solar collector, a recuperator formed by the double roof structure, and the entire structure well insulated on all external walls and floor.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 19, 1977 Completion Date: Jun 1, 1979

Received by DOE from NBS: Sep 20, 1977

Status: Complete Award Amount: \$54,980 Contract Period:

Development Stage: Limited Production/Marketing May 31, 1978 - Jun 1, 1979

Summary: A grant of \$54,980 was awarded to manufacture, install on-site, and demonstrate a new type tobacco curing barn. Test data confirm this type barn yields significant energy savings compared to earlier designs and present industry standards. Final report has been received and accepted as meeting all the requirements of the grant. The business was not successful because, the inventor claims, of institutional barriers.

=====

DOE #	46	DOE Coordinator	G. K. Ellis	Contact:	David J Secunda
OERI #	679	DOE Program Off:	CE		90 Prospect Hill Avenue
Category:	Industrial Processes				Summit NJ 07901
Title:	Thexon Dehydration				201-277-4475

Inventor:	David J Secunda	Patent Applied For
State/Country:	NJ	
Company:		

Description: The process uses mechanical methods to reduce a liquid, containing the product to be dried, to a very fine spray of droplets, which are then carried to an air stream at ambient temperature, pressure and humidity so that some unidentified phenomenon, possibly surface evaporation, can cause crystallization.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 4, 1976 Completion Date: Aug 1, 1980

Received by DOE from NBS: Sep 23, 1977

Status: Complete Award Amount: \$47,660

Development Stage: Laboratory Test

Summary: A grant of \$47,660 was awarded for the grantee to contract with TRW to make exploratory holograms and do some limited analysis, in order to assess the nature of the phenomena. The work has been completed, and the phenomenon found to be evaporation, but which occurs at room temperature without the deliberate addition of any external heat. Inventor is not presently pursuing the development of this technology and would be interested in considering licensing opportunities.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	47	DOE Coordinator	G.K.Ellis	Contact: Robert M Arthur	
OERI #	1773	DOE Program Off:	CE	548 Prairie Road	WI 54935
				Fond du Lac	
				414-922-6970	

Category: Industrial Processes

Title: Wastewater Aeration Power Control Device

Inventor: Robert M Arthur
State/Country: WI
Company: Arthur Technology, Inc.

Patent # 3 740 320 & Others

Description: An on-line respirometer to measure the oxygen demand of microorganisms in waste water, and to regulate the power required for supplying the oxygen needed to keep the organisms alive.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 7, 1977 Completion Date: Jun 26, 1981

Received by DOE from NBS: Oct 25, 1977

Status: Complete Award Amount: \$58,200

Development Stage: Engineering Design

Summary: A grant of \$58,200 was awarded and inventor was successful in developing a low-cost, less sophisticated model of an energy-saving on-line respirometer for use in wastewater treatment plants. Grantee has about \$2.5M out in proposals. Response has been slow from municipalities but good from industry. At last account, inventor was doing \$0.5 million/yr business; in 5-7 years, inventor estimates \$25 million.

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DOE #	48	DOE Coordinator	D. G. Mello	Contact: Werner E Howald
OERI #	197	DOE Program Off:	CE	

Category: Combustion Engines & Components

Title: Howald Combustor

Inventor: Werner E Howald
State/Country: OH
Company:

Description: A fuel nozzle and chamber that pre-mixes air and fuel for more efficient, and less polluting combustion in aviation and automotive gas turbines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 10, 1975 Completion Date: Feb 8, 1979

Received by DOE from NBS: Nov 9, 1977

Status: Complete

Development Stage: Laboratory Test

Summary: MIT Innovation Center provided inventor with technical review and analysis of support possibilities. MIT determined that the combustor designs were engineering improvement, not patentable. The scale of laboratory testing required to develop jet-engine combustors is beyond the scope of this program and is not being pursued in any DOE laboratory. Inventor was referred to private consulting firm which specializes in combustor design.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 49 DOE Coordinator D. G. Mello Contact: Wayne S Boals

OERI # 1192 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Automatic Control System for Water Heaters

Inventor: Wayne S Boals

State/Country: CA

Company:

Description: Invention is a valve to shut off water heater energy source, and to shut off cold water input in the event of a burst tank. It may also be applicable to solar systems.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 22, 1976 Decision Date: Sep 1, 1978

Received by DOE from NBS: Oct 31, 1977

Status: No DOE Support

Development Stage: Production Engineering

Summary: DOE determined that the device offered little or no direct energy saving potential. A manufacturer of valves declined an offer of the technology citing marketing studies indicating poor sales potential. Program office stated that solar heating system application was ineffective as conservation device. Development of similar devices is now being pursued by others.

=====

DOE # SD DOE Coordinator T.A.Coulter

Contact: Robert Cameron

OERI # 94 DOE Program Off: CE

Scotsman Automotive Corp.
855 Sterling Avenue, Suite #8
Palatine IL 60067
312-991-5770

Category: Combustion Engines & Components

Title: Scotsman Fuel Energizer

Inventor: Robert Cameron

Patent # 3 934 569

State/Country: IL

Company: Scotsman Automotive Corporation

Description: An accessory screen to atomize fuel in carbureted internal combustion engines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 2, 1975 Completion Date: Jul 11, 1978

Received by DOE from NBS: Nov 23, 1977

Status: Complete Award Amount: \$74,579

Development Stage: Production & Marketing

Summary: A grant of \$74,579 was awarded to the grantee to determine the principles of operation and to measure overall fuel saving performance of the device. DOE determined, based upon the findings and conclusions of the Inspector General, the grant to be fraudulently obtained and that all funds must be returned to DOE. Grantee has been notified.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 51 DOE Coordinator D.R.Craig Contact: Richard B Bentley

OERI # 1116 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Thermal Efficiency Construction

Inventor: Richard B Bentley

State/Country: NY

Company:

Description: A method for building an energy-efficient residence, incorporating a counterflow heat exchanger, double-wall insulation, and other unique features. Copyright plans sold under license.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 19, 1976 Decision Date:

Received by DOE from NBS: Dec 20, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: In July '78 inventor advised DOE of his intention to prepare a proposal. Nothing has been received to date. Inventor reported he had applied for a grant under the Appropriate Technology Program. DOE support cannot be considered without a proposal from the inventor, or his or her agent.

=====

DOE # 52 DOE Coordinator G. K. Ellis Contact: Sherman R Jenney

OERI # 172 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Air Wedge

Inventor: Robert G Landry (Deceased)

Patent # 3 740 320

State/Country: ME

Company:

Description: The device is an aerodynamic drag device for use with trucks, mounted on the front face of the trailer or the cargo box.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 13, 1975 Decision Date: Nov 28, 1979

Received by DOE from NBS: Dec 21, 1977

Status: No DOE Support

Development Stage: Concept Development

Summary: On November 28, 1979, the inventor was advised that there is no basis for DOE support because there are devices already installed on trucks on the highway, which accomplish the same purpose.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	53	DOE Coordinator	G.K.Ellis	Contact:	Harry E Wood	
OERI #	2070	DOE Program Off:	CE		6465 Oakland Drive	
					New Orleans	LA 70118
					504-488-7853	

Category: Buildings, Structures & Components

Title: High Efficiency Water Heater

Inventor: Harry E Wood
 State/Country: LA
 Company: Harry E Wood & Assoc.

Patent Applied For

Description: A direct contact, gas-fired hot water heater that can extract the latent heat of the water vapor formed during combustion.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 15, 1977 Completion Date: Mar 1, 1979

Received by DOE from NBS: Dec 23, 1977

Status: Complete Award Amount: \$72,600

Development Stage: Prototype Development

Summary: A grant of \$72,600 was awarded to install a direct contact gas fired hot water heater in a new 210-unit apartment building, and measure the system characteristics, efficiency and reliability. The results of this DOE support, and some free publicity on a national CBS program shortly thereafter, have materially assisted the inventor in marketing the technology. At last account, Kemco Co., Milwaukee, exclusive licensee, had sold 67 units (altogether saving 0.5 billion cu-ft gas/year), 48 in the last year, at \$30,000 each, with 30 more on order.

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DOE #	54	DOE Coordinator	D. G. Mello	Contact:	Edward Perry Sikes, Jr.	
OERI #	1355	DOE Program Off:	CE		Optimizer Control Corp.	
					Suite #104, 201 Burnside Pkwy	
					Burnsville	MN 55337
					612-894-3610	

Category: Combustion Engines & Components

Title: Optimizer

Inventor: Paul H Schweitzer (Deceased)
 State/Country: PA
 Company: Optimizer Control Corp.

Patent # 3 974 412 & Others

Grant # EU78-G016602

Description: A closed-loop electronic ignition for automobile engines. Spark advance is optimized for maximum power output, and minimum fuel consumption.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 25, 1976 Completion Date: Jun 15, 1981

Received by DOE from NBS: Jan 11, 1978

Status: Complete Award Amount: \$88,895 Contract Period:

Development Stage: Working Model Sep 1, 1978 - Jun 18, 1981

Summary: A grant of \$88,895 for one-year program was awarded and completed to design, develop, fabricate and test a pilot model of the Optimizer. Pennsylvania State University sub-contracted electronic design tasks and analytical evaluation. First progress report indicated that prototype performed as predicted. Penn. State Univ. has been assigned greater role in development of instrumentation and additional test units. Final results showed insufficient improvement to warrant further development.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 55 DOE Coordinator J.Aellen Contact: Richard D Palone

OERI # 2523 DOE Program Off: CE

Category: Fossil Fuels

Title: Electrically Heated Sucker-Rod

Inventor: Richard D & Chester Palone

Patent # 3 859 503

State/Country: AR

Company:

Description: An electric heater is the sucker rod used to drive a pump at the bottom of an oil well, intended to prevent paraffin from congealing and restricting flow, thus avoiding consequent costly maintenance cleanout.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 22, 1977 Decision Date: Dec 29, 1980

Received by DOE from NBS: Jan 30, 1978

Status: No DOE Support

Development Stage: Concept Development

Summary: This invention received a favorable review within DOE. During the last contact with the inventor, he said he had located an interested subcontractor and would soon be submitting a proposal requesting a DOE grant. Then, on December 29th, 1980 he advised that he no longer needed a grant.

=====

DOE # 56 DOE Coordinator G.K.Ellis

Contact: Jay Dornier
Quality Industries
P. O. Box #406
Thibodaux LA 70301
504-447-4021

OERI # 2238 DOE Program Off: CE

Category: Industrial Processes

Title: Flexaflo-The Wet Fuel Dryer

Inventor: William P Boulet

Patent # 3 976 018

State/Country: LA

Company: Quality Industries

Description: A dryer/boiler using sugarcane waste (bagasse) for fuel; exhaust gases from process are used to "pre-dry" fuel prior to entering boiler.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 24, 1977 Completion Date: Apr 1, 1979

Received by DOE from NBS: Mar 31, 1978

Status: Complete Award Amount: \$111,220

Development Stage: Prototype Test

Summary: A grant of \$111,220 was awarded to Quality Industries to modify design of existing bagasse dryer in sugar cane refinery to control airborne bagacillio to enable bagasse to replace oil-gas as alternate fuel for dryer. Results indeterminate due to poor industry economic conditions which tended to interfere with fair appraisal. Further testing needed to prove concept. Quality is interested in forming and financing R & D Limited Partnership in another industry with the same technology.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 57 DOE Coordinator G.K.Ellis Contact: Robert H Wieken
 411 Betty Lane, West
 OERI # 274 DOE Program Off: CE Saint Paul MN 55118
 612-457-8227

Category: Buildings, Structures & Components

Title: X-5 Smoke Eliminator

Inventor: Robert H Wieken Patent # 3 812 297
 State/Country: MN Grant # FG01-791R10097
 Company:

Description: A two-stage combustion chamber suitable for adapting existing incinerators to meet current EPA pollution requirement.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 23, 1975 Completion Date: Apr 1, 1981

Received by DOE from NBS: Mar 31, 1978

Status: Complete Award Amount: \$55,000 Contract Period:

Development Stage: Prototype Development Apr 1, 1979 - Apr 1, 1981

Summary: A grant of \$55,000 was awarded for the grantee to convert the X-5 Smoke Eliminator from its existing use as a gas burner to the burning of all grades of fuel oil.

=====

DOE # 58 DOE Coordinator D. G. Mello Contact: Charles M Kirk
 1965 Arrowhead Lane, NE
 OERI # 1922 DOE Program Off: CE Saint Petersburg FL 33703
 813-525-7878

Category: Transportation Systems, Vehicles & Components

Title: A Multiple Spark System Using Inductive Storage

Inventor: Charles M Kirk Patent Applied For
 State/Country: FL Grant # FG01-791R10025
 Company:

Description: Multiple spark system using a gated series of spark discharges on a single plug, to improve the fuel economy of a spark-ignition engine, by reducing the misfire rate.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 10, 1977 Completion Date: Feb 26, 1979

Received by DOE from NBS: Mar 31, 1978

Status: Complete Award Amount: \$59,079 Contract Period:

Development Stage: Prototype Test Feb 26, 1978 - Feb 26, 1979

Summary: A grant of \$59,079 was awarded to manufacture ten (10) prototype "MSS" units. Three units were installed on selected vehicles and dynamometer tested at University of Florida. ERIP assistance completed.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 59 DOE Coordinator G.K.Ellis Contact: Bernard Zimmern

OERI # 1680 DOE Program Off: CE

Category: Combustion Engines & Components

Title: The Volumetric Gas Turbine

Inventor: Bernard Zimmern

State/Country: France

Company:

Description: A positive displacement, modified Brayton cycle engine, for use primarily in automobiles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 15, 1976 Decision Date: Sep 24, 1982

Received by DOE from NBS: Apr 12, 1978

Status: No DOE Support

Development Stage: Concept Development

Summary: The inventor was interested in a large grant in the vicinity of \$1 million, an amount greater than the program could justify or provide. The inventor was advised that no support would be forthcoming.

=====

DOE # 60 DOE Coordinator D. G. Mello

Contact: William H Cone

OERI # 1654 DOE Program Off: CE

Coneco, Inc.

1151 Meadow Lane, A3

Waterloo

IA 50701

319-233-8224

Category: Miscellaneous

Title: Electric Transport Refrigerator

Inventor: William H Cone

Patent # 3 778 651 & Others

State/Country: IA

Company: Coneco, Inc.

Grant # EU78-G016601

Description: Prime mover engine of Refrigerated Truck is modified to function as an A.C. Generator as well as being an engine. Electricity produced, powers sealed refrigerator on trailer, replacing present diesel-powered refrigeration unit.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 13, 1976 Completion Date: Apr 9, 1980

Received by DOE from NBS: Apr 28, 1978

Status: Complete

Award Amount: \$50,000

Contract Period:

Development Stage: Prototype Test

Sep 25, 1978 - Apr 9, 1980

Summary: A grant of \$50,000 was awarded for one-year design, development, and testing of invention. Iowa State University was sub-contractor for electronic design tasks. Inventor procured a diesel engine for test and modification. Grantee completed all tasks except in-service demonstration. Technical problems with invention design prevented performance of last task. Inventor plans to seek private funds for continuation of project.

Inventions Recommended for DOE Consideration by NBS/ OERI - A Brief Status Report

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DOE #	61	DOE Coordinator	D.G.Mello	Contact:	Murry S. Laskey
OERI #	1088	DOE Program Off:	FE		2401 Pennsylvania Avenue
Category:	Industrial Processes				Suite #1010
					Wilmington DE 19806
Title:	Fuel Preparation Process				302-652-0115

Inventor:	Willing B Foulke	Patent #	3 932 145
State/Country:	DE	Grant #	FG01-81CS15041
Company:	Fluid Coal Corp.		

Description: A method for separating mineral matter from coal using a flotation process.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jun 14, 1976	Completion Date:	Jun 17, 1983
Received by DOE from NBS:	Apr 26, 1978		
Status:	Complete	Award Amount:	\$96,421
		Contract Period:	
Development Stage:	Concept Development		Jun 17, 1981 - Jun 14, 1982

Summary: A grant of \$96,421 was awarded for an experimental program on a laboratory scale basis with Research Triangle Institute as the contractor for the purpose of assessing the technical feasibility of the Foulke process. Grant complete, and the results appear promising. Inventor seeks licensing or other opportunities with industry.

=====

DOE #	62	DOE Coordinator	D.R.Craig	Contact:	Thaddeus Papis
OERI #	1029	DOE Program Off:	CE		10115 Victoria Avenue
Category:	Miscellaneous				Riverside CA 92503
					714-689-5041
Title:	Tapered Plate Annular Matrix				

Inventor:	Thaddeus Papis
State/Country:	CA
Company:	

Description: A compact heat tank exchanger that offers significant improvement over conventional shell-and-tank exchangers, especially for very high pressure applications.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	May 28, 1976	Completion Date:	Jun 22, 1979
Received by DOE from NBS:	Apr 28, 1978		
Status:	Complete	Award Amount:	\$79,800
Development Stage:	Production Engineering		

Summary: A grant of \$79,800 was awarded and completed for the inventor to analyze the potential uses, energy-related benefits, production techniques, and comparative economics of the heat exchanger. The study culminated in the definition of, and a plan for, a hardware demonstration program. The final report is being circulated among potential sources of private sector support for the hardware phase.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	63	DOE Coordinator	J. Aellen	Contact:	Thomas LoGiudice	
OERI #	1330	DOE Program Off:	CE		520 East 72d Street	
					New York	NY 10021
					212-737-6703	

Category: Buildings, Structures & Components

Title: Fluorobulb

Inventor:	Thomas LoGiudice	Patent #	3 953 761
State/Country:	NY		
Company:		Grant #	FGD1-791R10093

Description: Fluorescent bulb designed to directly replace an incandescent bulb. 20 watt bulb and ballast can be easily separated. Built on Edison screwbase.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 13, 1976 Completion Date: Aug 18, 1981

Received by DOE from NBS: May 3, 1978

Status: Complete Award Amount: \$49,500 Contract Period:

Development Stage: Prototype Development Apr 11, 1979 - Aug 1, 1981

Summary: A grant of \$49,500 was awarded and completed for research and product development. Grantee produced ten prototype bulbs, investigated problems of uniform coating, and produced certified data regarding lamp efficiency, luminous efficiency and accurate cost data for predicting production quantity costs. Data suggests that lamp is not likely to be manufactured at a competitive price.

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DOE #	64	DOE Coordinator	G. K. Ellis	Contact:	Lester Hendrickson	
OERI #	2543	DOE Program Off:	CE		Arizona State U.	
					School of Engineering	
					Tempe	AZ 85281
					602-965-9011	

Category: Industrial Processes

Title: The Mahalla Process--A Hydrometallurgical Method for Extracting Copper

Inventor:	Shalom Mahalla	Patent Applied For
State/Country:	AZ	
Company:		

Description: A hydrometallurgical process for refining copper that eliminates the electrofining step.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 1, 1977 Completion Date: Sep 1, 1979

Received by DOE from NBS: May 8, 1978

Status: Complete Award Amount: \$88,933

Development Stage: Laboratory Test

Summary: A grant of \$88,933 was awarded and the work completed, to develop and optimize the process variables on a laboratory scale. With the copper industry depressed, the technology is being adapted for industrial toxic waste recovery. At last account, Hendrickson sought \$500,000 to build a pilot plant having enough flexibility to be adaptable to the processing of feed sources from various industrial plant wastes.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	65	DOE Coordinator	J. Aellen	Contact:	Lee A Henningsen
OERI #	741	DOE Program Off:	CE		Firetrol, Inc.
Category:	Miscellaneous				1617 Cascade Street
					Erie PA 16502
					814-459-1770
Title:	WattVendor				
Inventor:	Lee A Henningsen				
State/Country:	PA				
Company:	Firetrol, Inc.				
				Grant #	FG01-791R10266
Description:	A coin operated device for dispensing electricity.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 18, 1976 Completion Date: Sep 10, 1979

Received by DOE from NBS: May 12, 1978

Status: Complete Award Amount: \$55,800 Contract Period:

Development Stage: Prototype Test Sep 14, 1979 - Dec 31, 1980

Summary: A grant of \$55,800 was awarded and completed, to manufacture and install sufficient units to completely convert Hillman Ferry Campground (TVA operated) from free to metered electric service. TVA will record user reactions, electric usage before and after, and operate units in one year demonstration program.

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DOE #	66	DOE Coordinator	D.G.Mello	Contact:	Daniel Ben-Shmuel
OERI #	2277	DOE Program Off:	CE		Heat Extractor Corporation
Category:	Industrial Processes				P.O. Box #455
					Johnstown NY 12095
					518-568-2288
Title:	Heat Extractor				
Inventor:	Philip Zacuto				
State/Country:	NY				
Company:	Heat Extractor Corp.				
				Grant #	EU78-G016677
Description:	A system for recovering "Waste Heat" from industrial combustion processes by using water in direct contact with combustion products and an auxiliary heat exchanger.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 20, 1977 Completion Date: Sep 29, 1978

Received by DOE from NBS: May 26, 1978

Status: Complete Award Amount: \$125,000 Contract Period:

Development Stage: Prototype Test Sep 29, 1978 -

Summary: A grant of \$125,000 was awarded and completed to install, operate and test, a heat extractor in an operating paper mill with Mohawk Paper Mills, Inc. Included were funds to adapt the heat extractor for coal-fired boilers. The work is complete. Results confirm significant fuel savings. As of January, 1985, inventor had sold the industrial unit to a Pittsburg firm and the residential one to Armitron. The unit is re-engineered and being marketed through Heat Extractor, Inc., Melrose, MA (800-633-3324)

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 67 DOE Coordinator G. K. Ellis Contact: James A Browning
OERI # 799 DOE Program Off: CE Browning Engineering Corp.
Category: Other Natural Sources P.O. Box #863 NH 03755
603-298-8400
Title: Windmill Using Hydraulic System for Energy Transfer and
Speed Control
Inventor: James A Browning Patent Applied For
State/Country: NH Grant # FG01-801R10320
Company: Browning Engineering Corp.
Description: A windmill design based on a hydraulic system for wind energy, particularly
suited for low to medium speed winds.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 5, 1976 Award Date: Dec 7, 1979

Received by DOE from NBS: Jun 20, 1978

Status: Award Award Amount: \$39,000 Contract Period:

Development Stage: Prototype Development Dec 7, 1979 - Dec 1, 1980

Summary: A grant of \$39,000 was awarded to complete the construction of the grantee's 70-ft
diameter hydraulic windmill, and then to test it. Accidents and delays in receipt of
materials have delayed the project.

=====

DOE # 68 DOE Coordinator T.A.Coults Contact: Charlie Bazel
OERI # 631 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Under Compression and Over Compression Free Helical Screw
Rotary Compressor
Inventor: Leroy M Bissett Patent # 3 936 239
State/Country: VA
Company: Dunham Bush, Inc.
Description: A compressor for use in medium-to-large sized heat pump-air conditioning
systems.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 22, 1976 Decision Date: Oct 1, 1979

Received by DOE from NBS: Jun 28, 1978

Status: Other Assistance

Development Stage: Prototype Development

Summary: As a result of the NBS recommendation and in consideration of an unsolicited
proposal from the grantee, the CE program within DOE funded a \$300,000 two-year
contract, which has now been completed. Results show good energy savings, but
further work is required to develop a commercial prototype of a marketable size.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	69	DOE Coordinator	G. K. Ellis	Contact:	Enoch J Durbin
OERI #	844	DOE Program Off:	CE		Instrumentation & Control Lab.
Category:	Combustion Engines & Components				Aero Lab., Forrestal Campus
					Princeton University
					Princeton NJ 08540
					609-452-5154
Title:	Ionic Fuel Control System for the Internal Combustion Engine				

Inventor: Enoch J Durbin Patent # 3 470 741
State/Country: NJ
Company:

Description: A system for controlling the air-fuel ratio of a gasoline internal combustion engine to maintain lean operation, improved fuel economy, and good performance.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 25, 1976 Completion Date: Jul 1, 1980

Received by DOE from NBS: Jun 29, 1978

Status: Complete Award Amount: \$87,051

Development Stage: Prototype Development

Summary: A grant of \$87,051 was awarded to develop the Ionic Fuel Control System and to assess its commercial feasibility. A successful prototype was developed. Despite much work, the inventor's only success with an automotive company was Chrysler's successful bid on a military contract which incorporated the technology. Adaptation of the device gives wind action in three directions, which could also be critical in determining velocities of STOL aircraft, where there have been a number of landing crashes for lack of this information.

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DOE #	70	DOE Coordinator	J. Aellen	Contact:	Kenneth A Stofen
OERI #	2847	DOE Program Off:	CE		3642 Country Avenue
Category:	Miscellaneous				Racine WI 53405
					414-554-7987

Title: Air Cooled Compressor Heat Recovery and Heat Circulation System plus Ambient Air Filter and Air Cleaner

Inventor: Kenneth A Stofen Patent Applied For
State/Country: WI
Company: Ken Stofen Associates

Description: A heat recovery system for large compressors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 21, 1977 Completion Date: Aug 8, 1980

Received by DOE from NBS: Jun 28, 1978

Status: Complete Award Amount: \$53,000

Development Stage: Limited Production/Marketing

Summary: A grant of \$53,000 was awarded to design and build ecology cabinets; and then assemble, operate, and test air cooled compressor systems in environments with particulate-laden and high temperature air. Final report received. Inventor is searching for venture capital and marketing assistance. He has sold a number of units but institutional factors prevent large sales.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 71 DOE Coordinator D. G. Mello Contact: Arleigh Wangler

OERI # 2538 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Knight Guard

Inventor: Arleigh Wangler

Patent Applied For

State/Country: CA

Company:

Description: A system for remote controlling the lighting in a building by means of low frequency radio signals.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 10, 1977 Decision Date: Sep 1, 1978

Received by DOE from NBS: Jun 29, 1978

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor is investigating law enforcement agencies' interest.

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DOE # 72 DOE Coordinator G. K. Ellis Contact: Basil W Balls

OERI # 733 DOE Program Off: CE

Category: Industrial Processes

Title: Utilization of Waste Gas for Boilers and Furnaces in Refineries and Petrochemical Plants

Inventor: Joe Agar

State/Country: TX

Company: Redland Automation

Description: System exploits the relationship between specific gravity of the flare gas and its BTU content, to compute BTU per hour and subsequently control the fuel-air ratio of boilers.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 8, 1976 Decision Date: Aug 8, 1980

Received by DOE from NBS: Jun 28, 1978

Status: No DOE Support

Development Stage: Laboratory Test

Summary: A procurement request for a grant was initiated on April 20, 1979. Shortly thereafter, Mr. Agar sold the company and the new manager indicated that the earlier proposal was not in accord with the company's new goals. Then, on Dec 28 1979, the company advised by telephone that they were not interested in pursuing the development at all, since it did not coincide with their company's new goals. Formal notification was received in an August 5, 1980 letter.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 73 DOE Coordinator G. K. Ellis Contact: Melvin H Sachs
ISTECH, INC
OERI # 1323 DOE Program Off: 29200 Vassar Ave., Suite #700
Livonia MI 48152
Category: Buildings, Structures & Components 313-478-0606
Title: INTECH

Inventor: Melvin H Sachs Patent # 3 800 015 & Others
State/Country: MI
Company: ISTECH, INC

Description: A system which uses light-weight aggregate insulation to provide the form-work for the concrete structural members of a building, with pre-finished exterior and interior surfaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Jun 22, 1979

Received by DOE from NBS: Aug 10, 1978

Status: Complete Award Amount: \$87,230

Development Stage: Production & Marketing

Summary: A grant of \$87,230 was awarded for the purpose of contracting with Underwriters Laboratories, Inc. to perform fire tests, and to contract with Lev Zetlin Consultants for structural testing and analysis. This invention won the "outstanding individual inventor" award from the Dvorkovitz Technology Show of 1980. At last account, Sachs was looking for \$2 million private sector money to design machinery for mass production. Some designs have been sold and built.

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DOE # 74 DOE Coordinator D. G. Mello Contact: G. R. Fitterer, President
Scientific Applications, Inc.
OERI # 2560 DOE Program Off: CE 825 Twelfth Street
Oakmont PA 15139
Category: Direct Solar 412-828-0233
Title: A Solid Electrolyte Galvanic Solar Energy Conversion Cell

Inventor: G R Fitterer Patent Applied For
State/Country: PA
Company: Scientific Applications, Inc. Grant # FG01-791R10264

Description: A high-temperature, high voltage (1.51V) fuel cell utilizing a unique calcium stabilized zirconia solid electrolyte. Device promises high efficiency, minimum environmental problems and wide application. It can also simultaneously produce chemical feedstock.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 19, 1977 Completion Date: Oct 30, 1980

Received by DOE from NBS: Aug 29, 1978

Status: Complete Award Amount: \$50,000 Contract Period:

Development Stage: Limited Production/Marketing Aug 24, 1979 - Oct 30, 1980

Summary: A grant of \$50,000 was awarded to conduct a two-part research project to investigate the characteristics of his Fuel Cell. Part one is a study of the primary cell and its voltage characteristics. Part two is research leading to selection of the best electrolyte. Results indicate that although workable, advantages over existing fuel cells are not significant.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	75	DOE Coordinator	G.K. Ellis	Contact:	Richard Jablin
OERI #	2265	DOE Program Off:	CE		2500 West Club Boulevard
					Durham NC 27705
					919-286-4693

Category: Industrial Processes

Title: Coke Quenching Steam Generator

Inventor: Richard Jablin Patent Applied For

State/Country: NC Grant # FG01-791R10212

Company:

Description: The steam generator is a direct contact heat exchanger for generation of process steam from hot coke. Objective: to build new coke ovens.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 6, 1977 Completion Date: May 14, 1979

Received by DOE from NBS: Aug 29, 1978

Status: Complete Award Amount: \$119,400 Contract Period:

Development Stage: Laboratory Test May 14, 1979 - Jun 3, 1982

Summary: A grant of \$119,400 was awarded to complete a program of laboratory and pilot plant scale development. The work was successful, with steam quality adequate for process steam, and coke quality superior to the only competing process. Inventor seeks limited partnership arrangement, and anticipates a \$10 million/year business.

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DOE #	76	DOE Coordinator	G.K.Ellis	Contact:	Donald R Ross
OERI #	2075	DOE Program Off:	CE		3344 South Grove
					Fort Worth TX 76110
					817-921-9671

Category: Industrial Processes

Title: The Ross Furnace

Inventor: Donald R Ross Patent Applied For

State/Country: TX

Company: Ross Research Company

Description: A new gas burner design for use in high temperature industrial process furnace.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 18, 1977 Completion Date: May 5, 1981

Received by DOE from NBS: Sep 18, 1978

Status: Complete Award Amount: \$82,000

Development Stage: Prototype Test

Summary: A grant of \$82,000 was awarded to build, assemble, operate and test two systems; one for a tilted furnace and one for a rotary furnace. The work was completed satisfactorily.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	77	DOE Coordinator	J. Aellen	Contact:	James W McCord
OERI #	1173	DOE Program Off:	CE		Corpane Industries, Inc.
Category:	Miscellaneous				250 Production Court
Title:	Variable Heat Refrigeration System				Bluegrass Industrial Park
					Louisville KY 40299
					502-491-4433

Inventor: James W McCord
State/Country: KY
Company: Corpane Industries, Inc.

Patent Applied For
Grant # FG01-80CS15026

Description: An improved vapor degreasing system incorporating a heat pump to conserve energy, retain solvents, and reduce hazards associated with solvent vapors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Sep 23, 1980

Received by DOE from NBS: Sep 25, 1978

Status: Complete Award Amount: \$97,400 Contract Period:

Development Stage: Working Model Sep 23, 1980 - Jun 1, 1982

Summary: An award of \$97,400 was granted to design and construct demonstration models of the variable heat refrigeration system.

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DOE #	78	DOE Coordinator	G. K. Ellis	Contact:	Robert McNeill
OERI #	1154	DOE Program Off:	ER		
Category:	Other Natural Sources				

Title: System for High Efficiency Power Generation from Low Temperature Sources

Inventor: Robert McNeill
State/Country: CA
Company:

Description: Concept for reducing the heat sink temperature in power plant operation and other applications; ice would be generated during cold weather and used to reduce the heat sink temperature during warmer weather.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 30, 1976 Decision Date: Mar 11, 1981

Received by DOE from NBS: Sep 28, 1978

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor advised DOE that he is no longer interested in pursuing the invention, because of other interests.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	79	DOE Coordinator	G. K. Ellis	Contact:	Marvin L Wahrman	
OERI #	1732	DOE Program Off:	FE		47 Red Rock	
					Irvine	CA 92714
					714-979-1280	

Category: Fossil Fuels

Title: Oil Well Bit Insert (Tooth), Cutting Article, Ablative

Inventor: Marvin L Wahrman
State/Country: CA
Company:

Patent Applied For

Description: A new composite bit insert to replace the tungsten carbide inserts now commonly used in the rotary cone cutter bits for oil and gas well drillings. It is claimed to have sharper edges, more resistant to wear, and to be stronger.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 21, 1977 Completion Date: Jan 29, 1981

Received by DOE from NBS: Aug 25, 1978

Status: Complete Award Amount: \$57,150

Development Stage: Prototype Test

Summary: A grant of \$57,150 was awarded to prove the technical feasibility and to address the repeatability and controlability of the manufacturing process for these bits. A bit was developed which cuts 3-4 times faster and lasts longer than conventional ones. At last account, company had 4 employees and had expanded to produce saw blades. Inventor interested in joint venture and projects 10% of the market in 5 years, doing \$50 to \$100 million business.

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DOE #	80	DOE Coordinator	D.R.Craig	Contact:	Patsie C Campana
OERI #	1764	DOE Program Off:	CE		

Category: Industrial Processes

Title: Improved Unfired Refractory Brick

Inventor: Patsie C Campana
State/Country: OH
Company:

Description: Chemically bonded, unfired, brick for ladles handling molten steel, consisting of 90% silica and containing 10% clay with minor amounts of hardening agent and Gulac.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 18, 1977 Decision Date: Mar 23, 1982

Received by DOE from NBS: Sep 28, 1978

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: A proposal has been received from the inventor for several million dollars to build a production facility. He was advised the program was unable to fund capital equipment, and potential alternatives of business plan and marketing study were described. The inventor has indicated no interest except on the basis of a large grant for capital equipment.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	81	DOE Coordinator	D. G. Mello	Contact:	C Richard Panico	
OERI #	2526	DOE Program Off:	CE		Xenon Corporation	
Category:	Industrial Processes				66 Industrial Way	
Title:	Flash Polymerization				Wilmington	MA 01887
					617-658-8940	

Inventor:	C Richard Panico	Patent #	3 782 889
State/Country:	MA	Grant #	FG01-79IR103D
Company:	Xenon Corp.		

Description: A process utilizing pulsed xenon arc discharge lamps for polymerizing thermosetting resins.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jul 26, 1977	Completion Date:	Feb 3, 1981
Received by DOE from NBS:	Sep 29, 1978		
Status:	Complete	Award Amount:	\$99,990
		Contract Period:	
Development Stage:	Prototype Test		Sep 29, 1979 - Feb 2, 1981

Summary: A grant of \$99,990 was awarded and completed, to conduct a 3-part investigation of the energy-saving and market penetration potential for this curing machine. A \$500,000 contract for automotive parts curing was captured as a result of DOE-supported Development work. Several venture capitalists have expressed considerable interest. Sale of the company has been discussed.

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DOE #	82	DOE Coordinator	D. G. Mello	Contact:	Robert L Ullrich	
OERI #	3D61	DOE Program Off:	CE		Ullrich Eng. & Mfg., Inc.	
Category:	Industrial Processes				1717 East Second Street	
Title:	Cool Air Induction				Roswell	NM 88201
					505-662-1821	

Inventor:	Robert L Ullrich	Grant #	FG01-79IR10284
State/Country:	NM		
Company:	Ullrich Engineering & Mfg., Inc.		

Description: Modification kit for engines used for powering irrigation pumps. Uses cool well water in air cooler placed between commercial supercharger and the engine.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Nov 23, 1977	Completion Date:	Sep 24, 1979
Received by DOE from NBS:	Oct 27, 1978		
Status:	Complete	Award Amount:	\$68,402
		Contract Period:	
Development Stage:	Limited Production/Marketing		Sep 24, 1979 - Apr 30, 1980

Summary: A two-phase grant in the amount of \$99,282 was requested. The first phase was awarded (\$68,402) and provided for analysis of existing operating data, a survey of the potential market, development and comparison of alternate strategies and a preparation of a formal business plan. Product is available for licensing.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 83 DOE Coordinator T.A.Coultas Contact: Charles James Bier
 OERI # 2821 DOE Program Off: CE Route #2, Box #35
 Ferrum VA 24088
 703-365-5178
 Category: Buildings, Structures & Components
 Title: Vertical Solar Louvers

Inventor: Charles James Bier
 State/Country: VA
 Company:

Grant # FG01-82CE15135

Description: Massive Rectangular Columns oriented in NE-SW direction, located indoors behind a glazed southern exposure. Aesthetic improvement over conventional TROMBE wall should lead to increased acceptance of passive solar heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 17, 1977 Completion Date: Feb 28, 1984

Received by DOE from NBS: Oct 27, 1978

Status: Complete Award Amount: \$26,510 Contract Period:

Development Stage: Concept Development Aug 31, 1982 - Feb 28, 1984

Summary: A grant of \$26,510 was awarded for inventor to prepare test plan, instrumentation strategy, and computer design guide. Final report was delivered September 30th, 1984. Results will be published in several semi-technical journals to encourage the passive solar concept.

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DOE # 84 DOE Coordinator T.A.Coultas Contact: Kenneth W Odil
 OERI # 2032 DOE Program Off: CE
 Category: Industrial Processes
 Title: Kinetic Energy Type Pumping System

Inventor: Kenneth W Odil
 State/Country: TX
 Company:

Patent # 3 123 009

Description: Simplified pumping system utilizes the kinetic energy of a circulating fluid to reduce the bottom-hole pressure and to lift the down-hole fluid.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 11, 1977 Decision Date: Sep 24, 1982

Received by DOE from NBS: Oct 30, 1978

Status: No DOE Support

Development Stage: Prototype Test

Summary: A proposal was received from the inventor which was unacceptable because it was considerably beyond the level of support funds that could be justified. The inventor then endeavored to find a cost sharing arrangement with an interested private industry. A 5/13/82 check with him indicated that due to other business interests, Mr. Odil temporarily at least, is not interested in pursuing his invention.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 85 DOE Coordinator D.G.Mello Contact: Charles G Kalt
 29 Hawthorne Road
 OERI # 3691 DOE Program Off: CE Williamstown MA 01267
 413-664-6371

Category: Buildings, Structures & Components

Title: Dielectric Windowshade

Inventor: Charles G Kalt Patent # 3 989 357
 State/Country: MA Grant # FG01-81CS15076
 Company:

Description: A method by which an applied voltage causes a reflective aluminized mylar film to unroll and press flat against a window.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 12, 1978 Completion Date: Aug 18, 1981

Received by DOE from NBS: Oct 31, 1978

Status: Complete Award Amount: \$99,500 Contract Period:

Development Stage: Concept Development Aug 18, 1981 - Nov 18, 1982

Summary: a grant of \$99,500 was awarded and completed, to design, build and test, a demonstration model of the Dielectric Windowshade. A unique product resulted. Test-marketing for commercial greenhouses has been completed.

=====

DOE # 86 DOE Coordinator G. K. Ellis Contact: Howard Bovars
 Diamond Energy Corporation
 1012 North Beck Street
 OERI # 2726 DOE Program Off: CE Salt Lake City UT 84103
 801-359-3718

Category: Fossil Fuels

Title: Coke Desulfurization

Inventor: Douglas MacGregor Patent # 4 011 303
 State/Country: UT Grant # FG01-80IR10305
 Company: Diamond Energy Corporation

Description: Method to remove sulfur from high sulfur coal during the coking process, which makes it possible to use high sulfur coals in the manufacture of metallurgical coke. Process can pay for itself with the sulfur by-product.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 21, 1977 Completion Date: Mar 23, 1981

Received by DOE from NBS: Nov 27, 1978

Status: Complete Award Amount: \$82,500 Contract Period:

Development Stage: Laboratory Test Dec 7, 1979 - Sep 30, 1981

Summary: A grant of \$82,500 was awarded for Diamond West Corporation, exclusive licensee, to perform sufficient additional technical, engineering and application investigation, to ready the technology for the marketplace. Licensee, with the help of the inventor, unable to duplicate results of initial experiment. But, they took a new approach and developed a successful process. \$1.5 million private monies invested to date, and doubling that is anticipated. At last account, inventor had tentative plans for joint venture to build a calciner for sale to coke industry.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	87	DOE Coordinator	J. Aellen	Contact:	Ruel Carlton Terry
OERI #	2224	DOE Program Off:	CE		3070 South High Street
Category:	Industrial Processes				Denver CO 80210
					303-759-3826
Title:	Recovering Uranium From Coal in Situ				
Inventor:	Ruel Carlton Terry			Patent #	4 113 313
State/Country:	CO			Grant #	FG01-801R10301
Company:					
Description:	A method for recovering uranium from the sites of depleted coal desposits that have been mined by in situ gasification.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	May 17, 1977	Completion Date:	Feb 6, 1980
Received by DOE from NBS:	Nov 29, 1978		
Status:	Complete	Award Amount:	\$85,240
		Contract Period:	
Development Stage:	Laboratory Test		Feb 1, 1980 - Aug 1, 1981

Summary: A grant of \$85,240 was awarded to reduce two of the uncertainties related to eventual commercialization of the process. The first uncertainty concerns potential sites and the second uncertainty relates to technical feasibility. DOE Livermore Lab believes this method has good commercial possibilities, but uranium price must rise to make it commercially feasible.

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DOE #	88	DOE Coordinator	D. G. Mello	Contact:	Lawrence Ladin
OERI #	1818	DOE Program Off:	CE		c/o Compressor Controls Corp.
Category:	Fossil Fuels				P. O. Box #1936
					Des Moines IA 50306
					515-244-1180
Title:	System-100				
Inventor:	Alex Rutshein, et al			Patent Applied For	
State/Country:	IA			Grant #	FG01-80CS15012
Company:	Compressor Controls Corp.				
Description:	A strategy (control system) for regulating centrifugal and reciprocating equipment used in natural gas compressor stations.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Feb 10, 1977	Completion Date:	Aug 12, 1980
Received by DOE from NBS:	Nov 30, 1978		
Status:	Complete	Award Amount:	\$50,000
		Contract Period:	
Development Stage:	Concept Development		Aug 26, 1980 - Aug 15, 1981

Summary: A grant of \$50,000 was awarded to develop a microprocessor- based strategy control system for control of compressors in gas transmission pipelines. Two pipelines have purchased product. Potential is easily \$1 million annual savings.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 89 DOE Coordinator D.R.Craig Contact: Henry E. Allen
 OERI # 2648 DOE Program Off: CE Technicon Corp.
 Category: Industrial Processes 511 Benedict Avenue NY 10591
 203-629-1180
 Title: Continuous Casting Process and Apparatus

Inventor: Henry E Allen Patent # 3 517 725
 State/Country: NY Grant # FG01-82CE15101
 Company: Technicon Corp.

Description: A continuous horizontal casting process for steel billets, slabs, and tubing, which achieves a very high quality product at twice the speed of existing continuous casting processes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 22, 1977 Completion Date: Jul 31, 1984

Received by DOE from NBS: Nov 30, 1978

Status: Complete Award Amount: \$115,000 Contract Period:

Development Stage: Prototype Development Jul 29, 1982 - Jul 31, 1984

Summary: A grant of \$115,000 was awarded to build and test a device for continuous casting of 4-inch bars of steel. The work on this project is complete. The project was generally successful. Lack of interest due to unfavorable economic conditions in steel industry however, prevents its commercialization.

=====

DOE # 90 DOE Coordinator J.Aellen Contact: Clinton Van Winkle
 OERI # 3790 DOE Program Off: CE
 Category: Industrial Processes
 Title: Grain Dryer

Inventor: Clinton Van Winkle Patent # 4 003 139
 State/Country: NE
 Company:

Description: A device to be added to a grain combine, to utilize the exhaust energy from the combine engine for drying the grain in the combine hopper tank.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 16, 1978 Decision Date:

Received by DOE from NBS: Dec 18, 1978

Status: No DOE Support

Development Stage: Prototype Development

Summary: Inventor not responsive. No basis for consideration of DOE grant support.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 91 DOE Coordinator D.G.Mello Contact: Rees Kinney, Atty.
Bagby Brattices, Inc.
OERI # 3210 DOE Program Off: FE P.O. Box #569
Greenville KY 42345
Category: Fossil Fuels 502-338-5619
Title: Mine Brattice

Inventor: James Allen Bagby Patent # 3 972 272
State/Country: KY
Company: Bagby Brattices, Inc. Grant # FG01-791R10302

Description: A reusable brattice for use in coal mining. Quick, and inexpensive to install
- seals better than present stoppings. Improved air seal saves power and
improves safety.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 20, 1977 Completion Date: Sep 20, 1979

Received by DOE from NBS: Dec 19, 1978

Status: Complete Award Amount: \$62,664 Contract Period:

Development Stage: Prototype Development Sep 29, 1979 - May 25, 1983

Summary: A grant of \$62,664 was awarded and completed to fabricate 25 prototype brattices and install them in Peabody Coal underground coal mine in Southern Illinois. Data was collected and possibly detrimental effects of natural subsidence on the performances of the brattices was measured and found to be minimal. Product advanced rapidly, with sales organization formed and 1982 sales of \$150,000. Product is accepted in the mining industries and is available for distribution. Corporation has doubled sales.

=====

DOE # 92 DOE Coordinator G.K.Ellis Contact: John L Carroll

OERI # 1160 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Tri-Water, A Combination Air Conditioning and Fire
Protection System for a Building.

Inventor: John L Carroll Patent # 3 939 914
State/Country: OR
Company:

Description: Utilizes common plumbing system with water serving as heat source/sink for
heat pumps as well as sprinkler system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 22, 1976 Decision Date:

Received by DOE from NBS: Dec 28, 1978

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor has licensed the technology to Americal Air Filter Co Inc. A grant was declined on the belief that it would compromise the inventor's patent position. At last account, American Air had installed \$22 million of the technology, including \$2 million for equipment and \$20 million for construction, representing 36 jobs. Another 30 were on the drawing board.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	93	DOE Coordinator	G.K.Ellis	Contact:	Edward H Shelander	
OERI #	1300	DOE Program Off:	CE		P.O. Box #603	
					Brunswick	GA 31520
					912-265-8464	

Category: Industrial Processes

Title: Shelander-Burrows Process for Recovery of Metallic Values
from Smelter Emissions

Inventor: Edward H Shelander
State/Country: GA
Company:

Patent # 3 849 121
Grant # FG01-80CS15004

Description: A solution/precipitation process for recovery of zinc, lead, and copper from
the baghouse dust collected from smelter emissions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Mar 29, 1980

Received by DOE from NBS: Jan 24, 1979

Status: Complete Award Amount: \$89,742 Contract Period:

Development Stage: Prototype Test Mar 28, 1980 - Jun 1, 1981

Summary: A grant of \$89,742 was awarded, and has been completed to provide an engineering and
economic analysis of the subject process.

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DOE #	94	DOE Coordinator	J. Aellen	Contact:	William M Fiorito	
OERI #	3675	DOE Program Off:	CE		12650 Mantilla Road	
					San Diego	CA 92128
					714-487-3945	

Category: Industrial Processes

Title: Lantz Converter

Inventor: William M Fiorito
State/Country: CA
Company: Pan American Resources, Inc.

Patent # 2 886 122
Grant # FG01-82CE15126

Description: Unit for pyrolyzing municipal refuse that uses natural gas to bring converter
up to pyrolyzing temperature and then switches to pyrolytic gases to maintain
the process.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 2, 1978 Completion Date: Jul 10, 1985

Received by DOE from NBS: Jan 30, 1979

Status: Complete Award Amount: \$134,000 Contract Period:

Development Stage: Concept Development Sep 20, 1982 - Sep 17, 1983

Summary: A one year grant of \$134,000 was awarded to operate the Lantz Converter under
engineering-test conditions to determine significant operating and economic factors.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 95 DOE Coordinator D. G. Mello Contact: Val O Bertoia

OERI # 3875 DOE Program Off: CE

Category: Other Natural Sources

Title: Omni-Horizontal Axis-Wind Turbine

Inventor: Val O Bertoia
State/Country: PA
Company: Bertoia Studio

Description: A low cost, self starting, horizontal axis wind turbine with novel blade orientation. Operation is relatively insensitive to wind direction.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 10, 1978 Decision Date: Aug 6, 1980

Received by DOE from NBS: Jan 30, 1979

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor requested project be terminated for his convenience. Preliminary DOE review suggested that project would not be economically justifiable.

=====

DOE # 96 DOE Coordinator J. Aellen Contact: Floyd R Anderson
OERI # 1869 DOE Program Off: CE Vast Research Company
Bella Vista AR 72712
Category: Combustion Engines & Components 5D1-855-92D2

Title: Leavell, Vibrationless, Low Noise, High Efficiency,
Pneumatic Percussion Tools and Air Compressor Systems

Inventor: Floyd R Anderson Patent # 3 266 581 & Others
State/Country: AR Grant # FGD1-IR10305
Company: Vast Research Company

Description: Pneumatic tools (paving breaker, etc.) reconfigured to obtain additional energy from high temperature compressed air. High temperature and low pressure requires larger displacement and therefore overall size to achieve same output power.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 28, 1977 Completion Date: Jul 28, 1980

Received by DOE from NBS: Feb 28, 1979

Status: Complete Award Amount: \$76,675 Contract Period:

Development Stage: Prototype Test Dec 7, 1979 - Sep 30, 1981

Summary: A grant of \$76,675 was awarded to design, build, and test six pneumatic tools. Independent test evaluation by a third party did analyze energy input and output, rate of work, noise and vibration. Results have been compared with performance of conventional tools; all criteria show outstanding advantages of the Anderson system. Company has raised \$3 million in private investments and 130 units have been put into demonstration service. Product is available for distributor sales.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	97	DOE Coordinator	J. Aellen	Contact:	James W McCord
OERI #	3679	DOE Program Off:	CE		Corpane Industries, Inc.
Category:	Industrial Processes				250 Production Court
					Bluegrass Industrial Park
					Louisville KY 40299
					502-491-4433
Title:	Water Drying System				
Inventor:	James W McCord			Patent Applied For	
State/Country:	KY				
Company:	Corpane Industries, Inc.			Grant #	FG01-80CS15025
Description:	A technique for removing wash water from manufactured parts by dipping parts into degreaser solvent and mechanically separating water by virtue of differences in liquid densities.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 9, 1976 Completion Date: Sep 10, 1980

Received by DOE from NBS: Feb 28, 1979

Status: Complete Award Amount: \$93,800 Contract Period:

Development Stage: Engineering Design Sep 10, 1980 - Jun 10, 1982

Summary: A grant of \$93,800 was awarded to design and construct demonstration models of a system to dry water from metal parts. Product is available for custom installation in production lines. The inventor has been successful in marketing his product.

=====

DOE #	98	DOE Coordinator	D.G.Mello	Contact:	James L. Chill, President
OERI #	3547	DOE Program Off:	CE		Chillcast, Inc.
Category:	Industrial Processes				404 Executive Boulevard
					Marion OH 43302
					614-383-6337
Title:	Process Development to Conserve Energy and Material---(in the manufacture of)---Bearings				
Inventor:	James L Chill			Patent Applied For	
State/Country:	OH				
Company:	Chillcast, Inc.			Grant #	FG01-80IR10321
Description:	A methodology for continuously casting a sheet of the desired bearing alloy, in the desired thickness, cutting it to the proper length, rolling it to the specified diameter, and welding it together.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 17, 1978 Award Date: Jan 7, 1980

Received by DOE from NBS: Mar 14, 1979

Status: Award Award Amount: \$123,994 Contract Period:

Development Stage: Prototype Development Jan 7, 1980 - Jun 30, 1983

Summary: A grant of \$123,994 was awarded for the grantee to work with Battelle Memorial Institute to optimize the rolling-pass and heat treatment schedules, establish and compare the performance characteristics of the prototype bearings with those made by current methods, evaluate cylindrical bearings with and without a seam weld, and investigate performance of prototypes containing only 3% tin. An entrepreneur is needed to market this invention successfully.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 99 DOE Coordinator D. G. Mello Contact: Robert Gordon, President
 Struct. Comp Inc., Inc.
 OERI # 4059 DOE Program Off: CE 6344 N. Irwindale Avenue
 Azusa CA 91702
 Category: Transportation Systems, Vehicles & Components 213-334-8221
 Title: Light Weight Composite Trailer Tubes

Inventor: Oscar Weingart
 State/Country: CA
 Company: Structural Composites Industries, Inc. Grant # FGD1-80IR10319

Description: A design and manufacturing method for manufacture of composite pressure vessels employed in highway transport of gaseous fuel.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 5, 1978 Completion Date: Jan 14, 1980

Received by DOE from NBS: Mar 30, 1979

Status: Complete Award Amount: \$96,000 Contract Period:

Development Stage: Engineering Design Jan 14, 1980 - Dec 31, 1980

Summary: A grant of \$96,000 was awarded to design, fabricate, and test a large scale section of a new light-weight composite trailer tube for highway transportation of compressed gases. Product requires sponsor for commercial introduction. Licensing is available. Prototype product sales total \$50,000.

=====

DOE # 100 DOE Coordinator J. Aellen Contact: Michael F Zinn
 Bio-Energy Systems, Inc.
 OERI # 3236 DOE Program Off: CE Box #191
 Ellenville NY 12428
 Category: Direct Solar 914-647-6482
 Title: Solaroil

Inventor: Michael F Zinn
 State/Country: NY
 Company: Bio-Energy Systems, Inc. Grant # FGD1-80CS15002

Description: A flexible rubber tubing solar collector for hot water and building heating systems. Collector is extrusion of ethylene-propylene-diamine rubber.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 5, 1977 Completion Date: Mar 25, 1980

Received by DOE from NBS: Mar 30, 1979

Status: Complete Award Amount: \$110,390 Contract Period:

Development Stage: Limited Production/Marketing May 24, 1980 - Nov 25, 1981

Summary: A grant of \$110,390 was awarded to test the product's performance in a variety of applications; in limited production/marketing stage when recommended. Sales for 1981 exceeded \$4 million through 400 distributors and dealers in the U.S and from licensees in five foreign countries. Company now publicly held, from \$2.5 million stock issue and employs 100 in three divisions. New products are developed and on the market.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 101 DOE Coordinator D.R.Craig Contact: Sharad M Dave
 27689 Doreen
 OERI # 2114 DOE Program Off: CE Farmington Hills MI 48024
 313-478-5976
 Category: Combustion Engines & Components
 Title: Controlled Combustion Engine

Inventor: Sharad M Dave Patent # 3 762 381
 State/Country: MI Grant # FG01-81CS15040
 Company:

Description: A modified intake valve for spark ignition engines. Creates increased turbulence at low throttle settings to allow lean burning mixtures.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 28, 1977 Completion Date: May 5, 1981
 Received by DOE from NBS: Apr 20, 1979
 Status: Complete Award Amount: \$85,000 Contract Period:
 Development Stage: Concept Development May 5, 1981 - Nov 30, 1982

Summary: An award of \$85,000 to modify a conventional engine was granted to provide variable valving in a variety of design and test on an engine dynamometer both for efficiency and performance. The project is completed. Inventor is seeking licensing.

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DOE # 102 DOE Coordinator D.G.Mello Contact: Frank C Bernhard
 11936 Claychester Drive
 OERI # 3205 DOE Program Off: CE St. Louis MO 63131
 314-822-3484
 Category: Buildings, Structures & Components
 Title: Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners

Inventor: Frank C Bernhard Patent # 3 977 823
 State/Country: MO Grant # FG01-80CS15003
 Company:

Description: The invention is a method to convert standard distillate fuel oil burners to residual fuel oil, which is accomplished by heating that portion of the combustion air used to atomize the fuel oil.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 19, 1977 Completion Date: Feb 21, 1980
 Received by DOE from NBS: Apr 24, 1979
 Status: Complete Award Amount: \$43,550 Contract Period:
 Development Stage: Concept Development Feb 21, 1980 - Sep 30, 1982

Summary: A grant of \$43,550 was awarded to design and build a packaged, self-contained fuel oil burning test stand that can burn residual fuel oil in any low-pressure, atomizing fuel oil burner. Test showed technical viability. Market presently very poor.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	103	DOE Coordinator	D.R.Craig	Contact:	Edwin E Eckberg
OERI #	1446	DOE Program Off:	CE		Ecklux R & D Vacuum Lab Inc
Category:	Buildings, Structures & Components				5504 Currier Road
					Boise ID 83705
					208-343-7442
Title:	Low Voltage Ionic Fluorescent Light Bulb				
Inventor:	Edwin E Eckberg			Patent #	3 447 098 & Others
State/Country:	ID			Grant #	FG01-80CS15007
Company:	Ecklux R & D Vacuum Laboratory, Inc.				
Description:	Fluorescent light bulb built on Edison base. Excited by array of gas discharge tubes. Uniform output, high efficiency, and long life are claimed.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Sep 17, 1976	Completion Date:	Sep 10, 1981
Received by DOE from NBS:	Apr 30, 1979		
Status:	Complete	Award Amount:	\$73,554
		Contract Period:	
Development Stage:	Engineering Design		Mar 12, 1980 - Sep 10, 1981

Summary: A grant of \$73,554 was awarded to design, develop, fabricate and test a series of one, two and four-bulb configuration low-voltage fluorescent ionic light bulbs. The one-bulb version will be developed to a point suitable for semi-automatic machine production. The grant was completed. The inventor is deceased. An entrepreneur is needed to develop further and market this invention.

=====

DOE #	104	DOE Coordinator	G. K. Ellis	Contact:	Eskil L Karlson
OERI #	2186	DOE Program Off:	CE		4634 State Street
Category:	Miscellaneous				Erie PA 16508
					814-871-7000
Title:	Low Continuous Energy Mass Separation System				
Inventor:	Eskil L Karlson			Patent Applied For	
State/Country:	PA			Grant #	FG01-80CS15008
Company:					
Description:	The invention is a combination of any two or all three separation techniques involving chromatography, electrophoresis, and centrifugation (common in all combinations) to provide a low-energy continuous separation of chemical species, either in the gas phase or liquid phase.				

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	May 11, 1977	Completion Date:	Feb 26, 1980
Received by DOE from NBS:	Apr 30, 1979		
Status:	Complete	Award Amount:	\$83,015
		Contract Period:	
Development Stage:	Laboratory Test		Feb 26, 1980 - Apr 26, 1981

Summary: A grant of \$83,015 was awarded to build and test two laboratory models. More development needed but the results encouraging with 90 percent separation each pass at several gal/min throughput. Needs another \$30-\$40 thousand for R & D, \$50 thousand to build a production prototype, and \$50 thousand for alternate version. Inventor wants connection with company interested in producing a unit to do genetic separations. Potential market at medical schools and labs, around 30 thousand units at \$2 to \$10 thousand per unit.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 105 DOE Coordinator J. Aellen Contact: Allen D Zumbrunnen
419 Sherman Avenue
OERI # 2467 DOE Program Off: CE Salt Lake City UT 84115
801-466-2663
Category: Industrial Processes
Title: High Frequency Furnace

Inventor: Allen D Zumbrunnen Patent # 4 133 969
State/Country: UT Grant # FG01-81CS15077
Company:

Description: A furnace for the melting of reactive metals and semi-conductors which must be obtained in high purity form. It employs high frequency heating in a manner that allows the metal being melted to form its own crucible.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 24, 1977 Completion Date: Jul 10, 1985

Received by DOE from NBS: Apr 30, 1979

Status: Complete Award Amount: \$121,554 Contract Period:

Development Stage: Concept Development Sep 30, 1981 - Dec 31, 1983

Summary: A grant of \$121,554 was awarded to build and test a prototype high frequency induction furnace for the production of silicon for solar cells. The work is proceeding.

=====

DOE # 106 DOE Coordinator D. G. Meljo Contact: James L Ramer
OERI # 2753 DOE Program Off: CE
Category: Miscellaneous
Title: Deep Shaft Hydro-Electric Power

Inventor: James L Ramer
State/Country: MO
Company:

Description: A proposal to investigate the use of underground salt domes/caves as pumped storage of water for production of peak demand electricity.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 30, 1977 Decision Date: Jul 18, 1979

Received by DOE from NBS: May 10, 1979

Status: No DOE Support

Development Stage: Concept Definition

Summary: Material submitted as proposal to DOE described a concept that related several known ideas and proposed to unite them into one large experiment. The work was not definitive or feasible enough to justify grant award by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	107	DOE Coordinator	J. Aellen	Contact:	Ping-Wha Lin
OERI #	1416	DOE Program Off:	CE		506 South Darling Street
Category:	Industrial Processes				Angola IN 46703
					219-665-
Title:	Waste Products Reclamation Process				

Inventor:	Ping-Wha Lin	Patent #	3 861 930 & Others
State/Country:	IN	Grant #	FG01-81CS15143
Company:			

Description: This is a process for desulfurizing combustion gases, with a by-product "Linfans" which is claimed to have economic uses as a 1) construction material, 2) reagent for treating waste water, and 3) agent to react with sulphur dioxide in stack gas scrubbing processes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Sep 9, 1976	Completion Date:	Sep 30, 1982
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Received by DOE from NBS:	May 31, 1979
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Status:	Complete	Award Amount:	\$129,888	Contract Period:	
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Development Stage:	Laboratory Test	Sep 30, 1982 - Dec 31, 1983
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Summary: A grant of \$129,888 was awarded to define the operating parameters and optimize the variables. Final report shows considerable uses for the invention. Inventor attempting to find customers and suppliers, etc.

=====

DOE #	108	DOE Coordinator	G. K. Ellis	Contact:	Paul J Cromwell
OERI #	4688	DOE Program Off:	CE		Cromwell Metals, Inc.
Category:	Industrial Processes				1895 Sheridan Drive
					Buffalo NY 14223
					716-876-9105
Title:	Processing Recovery of Aluminum				

Inventor:	Paul J Cromwell	Patent #	4 126 673
State/Country:	NY	Grant #	FG01-80CS15009
Company:	Cromwell Metals Inc.		

Description: The invention is a mechanical process, operated at room temperature, (except for the reduction step) for separating aluminum metal from the dross.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Dec 27, 1978	Completion Date:	Jun 12, 1981
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Received by DOE from NBS:	May 31, 1979
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Status:	Complete	Award Amount:	\$158,029	Contract Period:	
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Development Stage:	Prototype Test	Jun 11, 1980 - Jun 12, 1981
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Summary: A grant of \$158,029 was used to develop a mechanical process for recovering aluminum from dross (i.e. waste). The inventor secured \$1.5 million in financing and opened a plant in Buffalo. The plant was closed down however, due to the depressed nature of the aluminum industry. Subsequently, the inventor patented a new process for melting aluminum beverage cans.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	109	DOE Coordinator	D.G.Mello	Contact:	H. W. Kennick	
OERI #	3321	DOE Program Off:	CE		Clark Meat Science Lab	
Category:	Miscellaneous				Oregon State University	
					Corvallis	OR 97331
					503-754-3675	

Title: Hydrostatic Meat Tenderizer

Inventor: H. W. Kennick
 State/Country: OR
 Company: Clark Meat Science Lab.

Grant # FG01-80CS15013

Description: The invention is a method for tenderizing low-grade, grass fed beef by subjecting the boned meat to a hydrostatic pressure of over 15,000 psi for several minutes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 11, 1978 Completion Date: Jun 24, 1980

Received by DOE from NBS: Jun 19, 1979

Status: Complete Award Amount: \$86,000 Contract Period:

Development Stage: Prototype Test Jun 24, 1980 - Mar 1, 1983

Summary: A grant of \$86,000 was awarded to investigate and develop a feasible commercial process. The projects results show that the process is feasible and the product is at least as tender and tasty as traditionally processed grain-fed beef. Technical data are available for the cost of handling from the University.

=====

DOE #	110	DOE Coordinator	D.G.Mello	Contact:	Karl H. Bergey	
OERI #	3425	DOE Program Off:	CE		Route #1, Box #151B	
Category:	Other Natural Sources				Norman	OK 73069
					405-364-3675	

Title: Improved Windpower Generating System

Inventor: Karl H. Bergey
 State/Country: OK
 Company: Bergey Windpower Company

Patent Applied For
 Grant # FG01-08CS15011

Description: Self regulating, two-part windmill rotor with inner part for low speed wind and outer part for high speed wind.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 19, 1978 Completion Date: Aug 27, 1980

Received by DOE from NBS: Jun 29, 1979

Status: Complete Award Amount: \$74,875 Contract Period:

Development Stage: Prototype Development Aug 26, 1980 - Sep 30, 1982

Summary: A 13-month grant of \$74,875 was awarded for the development of an analytical program to characterize the operation of the Bergey windmill, design and test the prototype, and perform an economic analysis of the benefits of the design. Invention is available for wholesale and retail distribution.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	111	DOE Coordinator	T.A.Coultas	Contact:	John C. Haspert	
OERI #	3688	DOE Program Off:	FE		P.O. Box #1252	
Category:	Fossil Fuels				Arcadia	CA 91006
					213-445-0030	
Title:	Haspert Mining System					

Inventor:	John C Haspert	Patent #	4 062 594
State/Country:	CA		
Company:	Underground Systems	Grant #	FG01-80CS15006

Description: The invention is intended for developing rectangular openings for mineral development. It is a mechanical apparatus that cuts linear grooves in rock using drag bits and then breaks the rock between the grooves primarily in the tension mode. Potential applications are in oil shale, rock and possibly coal.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Mar 27, 1978	Completion Date:	Sep 11, 1981
Received by DOE from NBS:	Jun 29, 1979		
Status:	Complete	Award Amount:	\$125,000
		Contract Period:	
Development Stage:	Limited Production/Marketing		Mar 27, 1980 - Jun 30, 1981

Summary: A grant of \$125,000 was awarded to provide a complete set of preliminary design drawings for a prototype machine for "driving" a drift for the mining of oil shale and coal. The cutter produces uniformly sized material at lower costs than present methods. The work was completed and the inventor seeks licensing and/or venture capital.

=====

DOE #	112	DOE Coordinator	D.R.Craig	Contact:	Paul Zanoni	
OERI #	548	DOE Program Off:	CE		Boulder Engineering, Inc.	
Category:	Fossil Fuels				Fifty-Five Highland Street	
					Weatherfield	CT 06109
					203-529-2952	

Title: Pump

Inventor:	Paul Zanoni	Patent #	3 314 236
State/Country:	CT		
Company:	Boulder Engineering, Inc.	Grant #	FG01-81CS15057

Description: A conventional steam injector to serve as both feedwater pump and direct contact feedwater heater in conventional steam power plants.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Dec 29, 1975	Award Date:	Aug 3, 1981
Received by DOE from NBS:	Jul 26, 1979		
Status:	Award	Award Amount:	\$99,870
		Contract Period:	
Development Stage:	Concept Development		Aug 3, 1981 - Jun 21, 1984

Summary: A grant of \$99,870 was awarded to design, build, and install system for field tests at Worcester Poly Tech in Massachusetts. System will operate in conjunction with existing steam power plant. The inventor complains that he is not getting proper cooperation from Worcester Polytechnic, making it impossible to complete the project.

=====

DOE # 113 DOE Coordinator D.R.Craig Contact: Henry J Wallace
 OERI # 3865 DOE Program Off: CE 570 Squaw Run Road PA 15238
 412-963-0030
 Category: Industrial Processes
 Title: Wallace Mold Additive System

Inventor: Henry J Wallace Patent # 3 871 058 & Others
 State/Country: PA Grant # FG01-82CE15093
 Company:

Description: A device and method for feeding small pieces of metal scrap of known composition and at a fixed rate into a mold, while molten metal is being poured.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 20, 1978 Completion Date: Apr 17, 1985

Received by DOE from NBS: Jul 31, 1979

Status: Complete Award Amount: \$89,000 Contract Period:

Development Stage: Prototype Development Sep 22, 1982 - Sep 21, 1983

Summary: A grant of \$89,000 was awarded to build and test a feeding device to be installed on a mini-mill located in Florida. The grant work is completed. The Wallace injection system is patented in the U.S. and many other countries. The inventor is seeking licensing arrangement for his process through Blair-Knox Equipment Division of Blairnox, Pa. (412,781-2700). Blair-Knox Equipment is licensed to supply apparatus for the Wallace Additive Injection System.

=====

DOE # 114 DOE Coordinator D.R.Craig Contact: Mario Bruno
 OERI # 3863 DOE Program Off: CE
 Category: Transportation Systems, Vehicles & Components
 Title: New Energy-Saving Tire for Motor Vehicles

Inventor: Renato Monzini
 State/Country: Milan, I
 Company: ECO Tires Company

Description: An automobile tire of innovative design intended to reduce rolling friction below that of equivalent radial tires. Special rims are required.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 20, 1978 Decision Date:

Received by DOE from NBS: Jul 31, 1979

Status: No DOE Support

Development Stage: Prototype Development

Summary: No basis for support.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 115 DOE Coordinator D. G. Mello Contact: Clyde G Phillips
Rural Route #2
OERI # 1188 DOE Program Off: CE Box #148-G, Angola Beach
Lewes DE 19971
Category: Miscellaneous 302-945-9093
Title: Refrigeration System

Inventor: Clyde G Phillips Patent # 3 783 629
State/Country: DE
Company: Phillips Engineering Company Grant # FG01-801R10318

Description: Device to be installed between the compressor and the air cooled condenser in a small refrigeration unit. It consists of a dryer-filter heat exchanger, a venturi-ejector, and connecting piping.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 2, 1976 Completion Date: Feb 22, 1980

Received by DOE from NBS: Jul 31, 1979

Status: Complete Award Amount: \$6,910 Contract Period:

Development Stage: Laboratory Test Dec 7, 1979 - Dec 1, 1980

Summary: The grantee installed his device in one large-capacity, and one small-capacity commercially available air conditioners and shipped them to an independent testing laboratory where the change in performance was documented. No energy savings were apparent.

=====

DOE # 116 DOE Coordinator G. K. Ellis Contact: Roy J Weikert
OERI # 2946 DOE Program Off: CE
Category: Industrial Processes
Title: Model 5000 ASEPAK System

Inventor: Roy J Weikert Patent # 3 813 845 & Others
State/Country: OH
Company: General Films, Inc.

Description: The inventions are for new methods for fabricating and aseptically filling sterile plastic bags with certain classes of food materials that have been previously sterilized by ultra-high temperature processes for very short periods of time.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 4, 1977 Decision Date: Oct 4, 1980

Received by DOE from NBS: Aug 30, 1979

Status: No DOE Support

Development Stage: Prototype Development

Summary: Unable to identify suitable scope of work which was both agreeable to the inventor and supportable by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	117	DOE Coordinator	J. Aellen	Contact:	George E Mattson	
OERI #	2189	DOE Program Off:	CE		361 Moraine Street	
					Brackton	MA 02401
					617-585-3598	

Category: Direct Solar

Title: "Solarspan" Prism Trap

Inventor:	John Mattson	Patent Applied For
State/Country:	MA	
Company:		Grant # FGD1-80CS15024

Description: An all-plastic, black liquid, solar collector with provisions for freeze and overheat protection. Plastic can be molded to give good structural properties with thin sections.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Mar 28, 1977	Completion Date:	Sep 30, 1980
Received by DOE from NBS:	Sep 20, 1979		
Status:	Complete	Award Amount:	\$98,700
		Contract Period:	
Development Stage:	Prototype Test		Sep 30, 1980 - Oct 30, 1981

Summary: A grant of \$98,700 was awarded to design, test and construct, low-cost plastic solar water heating panels. The project was successful. Evaluation by the Oak Ridge National Laboratory comments that this invention "will save the solar program by showing all concerned that low costs can be achieved." Product is available for wholesale distribution.

=====

DOE #	118	DOE Coordinator	J.Aellen	Contact:	Roderick L Smith	
OERI #	3876	DOE Program Off:	CE		Energy Adaptive Grinding, Inc.	
					29 Airport Drive	
					Rockford	IL 61109
					815-399-5614	

Category: Industrial Processes

Title: Energy Adaptive Control of Precision Grinding

Inventor:	Roderick L Smith	Patent #	3 653 855
State/Country:	IL		
Company:	Energy Adaptive Grinding, Inc.	Grant #	FGD1-81CS15075

Description: An otherwise conventional, universal, external cylindrical grinder retrofitted with a computer control to save energy in removing metal.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Apr 24, 1978	Completion Date:	Jul 10, 1985
Received by DOE from NBS:	Sep 27, 1979		
Status:	Complete	Award Amount:	\$99,328
		Contract Period:	
Development Stage:	Prototype Test		Sep 15, 1981 - Sep 15, 1982

Summary: A grant of \$99,328 was awarded to perform a complete engineering design and test of the invention prototype equipment. The inventor is successfully producing and marketing his product.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

DOE # 119 DOE Coordinator D.R.Craig Contact: Otis W Smith

OERI # 4056 DOE Program Off: CE

Category: Industrial Processes

Title: Air Ratio Controller (AERTROL)

Inventor: Eldon L Asher

State/Country: FL

Company: PROTROL, Inc.

Description: A controller that controls the running time of a blower in proportion to the rate of flow of liquid in forced aeration type sewage plants; developed specifically to serve many small package treatment plants with liquid flow of less than 100,000 gallons per day.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 5, 1978 Decision Date: Jul 17, 1981

Received by DOE from NBS: Sep 28, 1979

Status: No DOE Support

Development Stage: Concept Development

Summary: Proposal for marketing was rejected by DOE.

DOE # 120 DOE Coordinator D.G.Mello

Contact: Robert Zartarian
Food Facilities Design
Fifteen Redman Road
Canton MA 02021

OERI # 4562 DOE Program Off: CE

Category: Miscellaneous

Title: Vapor Heat Transfer Commercial Griddle

Inventor: Robert Zartarian

Patent Applied For

State/Country: MA

Company: Food Facilities Design

Grant # FG01-82CE15124

Description: A griddle for restaurants with its surface heated by vapor condensation. This vapor is boiled with electric elements in a sump below the griddle surface. Vapor and condensed liquid are hermetically sealed.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 2, 1978 Award Date: Sep 2, 1982

Received by DOE from NBS: Oct 17, 1979

Status: Award Award Amount: \$72,603 Contract Period:

Development Stage: Limited Production/Marketing Sep 2, 1982 - Aug 31, 1983

Summary: A 12-month grant of \$72,603 was awarded for a two-phase, 7-task development project in which the grantee will perform R & D tasks relating to product improvement and safety, as well as market development.

Inventions Recommended for DOE Consideration by NBS/ OERI - A Brief Status Report

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DOE # 121 DOE Coordinator J. Aellen Contact: James B Whitmore

OERI # 4843 DOE Program Off: CE

Category: Direct Solar

Title: Solar Space Heating for both Retrofit and New Construction

Inventor: James B Whitmore

State/Country: MI

Company: Sunway Heatings Systems, Inc.

Description: Passive solar collector using air as the transfer fluid. Designed for vertical south wall of a structure.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 8, 1979 Decision Date:

Received by DOE from NBS: Oct 25, 1979

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor is in commercial production. Over 6000 installations, costing \$30 million, have been made.

=====

DOE # 122 DOE Coordinator J. Aellen

Contact: Michael D Leshner
Fuel Injection Dev. Corp.

OERI # 4035 DOE Program Off: CE

110 Harding Avenue
Bellmawr NJ 08030
609-931-3168

Category: Combustion Engines & Components

Title: Lean Limit Controller

Inventor: Michael D Leshner

Patent # 4 015 572

State/Country: NJ

Company: Fuel Injection Development Corp.

Grant # FG01-80CS15022

Description: A device to apply adaptive control to air-fuel metering in internal combustion engines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 12, 1978 Completion Date: Sep 24, 1980

Received by DOE from NBS: Nov 23, 1979

Status: Complete Award Amount: \$99,500 Contract Period:

Development Stage: Prototype Test Sep 24, 1980 - Dec 24, 1981

Summary: An grant of \$99,500 was awarded to design and test a lean limit control device for an internal combustion engine. Device is workable but engineering estimates show it will not be cost effective.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 123 DOE Coordinator G.K. Ellis Contact: J. Paul Pemsler, President
Castle Technology Corp.
OERI # 4573 DOE Program Off: CE P. O. Box #403
Lexington MA 02133
Category: Industrial Processes 617-861-1274
Title: Comminution of Ores by a Low-Energy Process

Inventor: J Paul Pemsler
State/Country: MA
Company: Castle Technology Corp. Grant # FG01-80CS15020

Description: Heating with microwaves to differentially expand and fracture the sulphur containing elements of ore and porphary rock, intended as a preliminary stage in the processing of ore before the grinding stage.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 6, 1978 Completion Date: Sep 25, 1980
Received by DOE from NBS: Nov 29, 1979
Status: Complete Award Amount: \$90,394 Contract Period:
Development Stage: Laboratory Test Sep 15, 1980 - Nov 25, 1981

Summary: A grant of \$90,394 was awarded to explore the technical feasibility and determine the energy input for the process. The energy requirements to accomplish any practical degree of fracturing were found to be beyond the range of equipment that was available for this project.

=====

DOE # 124 DOE Coordinator J/Aellen Contact: Charlton Sadler
OERI # 4352 DOE Program Off: CE
Category: Direct Solar
Title: Solar Collector

Inventor: Charlton Sadler Patent # 4 170 983 & Others
State/Country: FL
Company:

Description: This solar collector is a two foot square module constructed entirely of a non-porous ceramic which has been fired at high temperatures so that it is vitrified.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 30, 1978 Decision Date: Jun 2, 1982
Received by DOE from NBS: Nov 30, 1979
Status: No DOE Support
Development Stage: Working Model

Summary: Unable to agree with the inventor upon an acceptable statement of work. No basis for support.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	125	DOE Coordinator	G.K.Ellis	Contact:	Frank W Bailey	
OERI #	707	DOE Program Off:	CE		P.O. Box #94	
Category:	Buildings, Structures & Components				Fourth Avenue	
					Haskell	NJ 07420
					- -	

Title: The Turbulator Burner System

Inventor:	Frank W Bailey	Patent Applied For
State/Country:	NJ	
Company:	Bailey Burners, Inc.	Grant # FG01-81CS15016

Description: Invention is a stirred heat exchanger (SHE) consisting of a heat exchanger with an annular cross section surrounding a region where the higher temperature fluid flows axially. Blades attached to an axial shaft stir the fluid at the surface of convective heat transfer. Offers possibility of enhanced heat transfer using dirty gases.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 11, 1976 Completion Date: Sep 29, 1980

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: \$75,000 Contract Period:

Development Stage: Prototype Test Sep 11, 1980 - Sep 14, 1981

Summary: A grant of \$75,000 was awarded to design, build, test, and evaluate both an externally and an internally stirred heat exchanger. Trying to locate inventor, and unable as yet, to evaluate grant results.

=====

DOE #	126	DOE Coordinator	J. Aellen	Contact:	Karl O Scheffer	
OERI #	4970	DOE Program Off:	CE		121 Governor Drive	
Category:	Industrial Processes				Scotia	NY 12302
					518-379-0016	

Title: Vaciclaim

Inventor:	Karl O Scheffer	Grant # FG01-81CS15036
State/Country:	NY	
Company:		

Description: A system for use in metal casting foundries. Reclaims heat from metal castings and energy from the binder in no-bake molds. Eliminates smoke and fumes from the foundry.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 19, 1979 Completion Date: Apr 1, 1981

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: \$97,734 Contract Period:

Development Stage: Laboratory Test Apr 1, 1981 - Jun 30, 1983

Summary: A grant of \$97,734 was awarded for fabrication and testing heat recovery in vacuum metal casting process using no-bake molds. Inventor seeks license arrangements.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	127	DOE Coordinator	D.G.Mello	Contact:	J D Seader
OERI #	5003	DOE Program Off:	FE		Merrill Engineering Building
Category:	Fossil Fuels				University of Utah
					Salt Lake City UT 84112
					801-581-6348

Title: Process and Apparatus to Produce Crude Oil from Tar Sands

Inventor: J D Seader
State/Country: UT
Company:

Grant # FG01-82CE15136

Description: Two vessel fluidized bed system connected by heat pipes to transfer heat between the upper pyrolyzer vessel, and the lower combustor vessel in which char residue is burned. Clean sand comes out in the tailings and a usable grade of synthetic crude oil out the overhead.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 26, 1979 Completion Date: Sep 16, 1984

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: \$49,949 Contract Period:

Development Stage: Laboratory Test Sep 16, 1982 - Sep 30, 1983

Summary: A 12-month grant of \$49,949 was awarded to the University of Utah to design, construct and operate, a device for the purpose of producing crude oil from tar sands. Goals to prove the design and optimize the variables including the product mix, and to prove the concept, have been achieved.

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DOE #	128	DOE Coordinator	D.G.Mello	Contact:	J D Seader
OERI #	5004	DOE Program Off:	CE		Merrill Engineering Building
Category:	Fossil Fuels				University of Utah
					Salt Lake City UT 84112
					801-581-6348

Title: Continuous Distillation Apparatus and Method

Inventor: J D Seader
State/Country: UT
Company:

Patent Applied For
Grant # FG01-82CE15136

Description: New design for distilling column where the rectifying and stripping sections are side by side and heat pipes transfer heat from the rectifying to the stripping section.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 26, 1979 Completion Date: Apr 2, 1985

Received by DOE from NBS: Dec 31, 1979

Status: Complete Award Amount: \$49,652 Contract Period:

Development Stage: Concept Development Sep 16, 1982 - Sep 30, 1983

Summary: A 12-month grant of \$49,652 was awarded to the University of Utah to design, construct and operate, a model distillation apparatus to simulate the rectifying and stripping sections of a proposed continuous distillation apparatus.

=====

DOE # 129 DOE Coordinator J. Aellen Contact: James E Kessler
 OERI # 4007 DOE Program Off: CE Box #8115
 Leawood KS 66208
 913-722-0504

Category: Buildings, Structures & Components

Title: Super U System - Snap Strap

Inventor: James E Kessler Patent # 4 069 636
 State/Country: KS
 Company: CIS International, Inc. Grant # FG01-81CS15209

Description: Super U-Snap strap insulation system which is an innovative application technique.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 24, 1978 Completion Date: Nov 28, 1980

Received by DOE from NBS: Jan 31, 1980

Status: Complete Award Amount: \$84,642 Contract Period:

Development Stage: Prototype Development Nov 28, 1980 - Nov 28, 1981

Summary: A grant of \$84,642 was awarded to test market the Super U System. The project has created ten jobs, and sales have increased 100% (to \$300,000). Product is available for franchise.

=====

DOE # 130 DOE Coordinator J. Aellen Contact: Arnold R Post

OERI # 4389 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Furnace Input Capacity Trimming Switch

Inventor: Arnold R Post
 State/Country: PA
 Company:

Description: A simple inexpensive device for gas and oil furnaces to reduce the flue gas heat loss. During morning startup, when the room thermostat is calling for heat, the device will cycle the furnace on and off to minimize flue gas heat loss.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 11, 1978 Decision Date:

Received by DOE from NBS: Feb 26, 1980

Status: No DOE Support

Development Stage: Laboratory Test

Summary: Project terminated because inventor failed to respond. After repeated requests, inventor was finally informed that he had until August 30, 1981 to submit a preliminary proposal or his invention would no longer be considered for DOE support. Inventor failed to respond - project terminated.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 131 DOE Coordinator J. Aellen Contact: N. John Beck
OERI # 511D DOE Program Off: CE BKM, Inc.
Category: Combustion Engines & Components 1065 Bay Blvd., Suite C
Chula Vista CA 92011
714-425-3510

Title: Valve Deactuator for Internal Combustion Engines

Inventor: Edgar R Jordan Patent # 4 114 588
State/Country: MI Grant # FG01-D8CS15D23
Company: LPK, Inc.

Description: A retrofit device that can provide variable displacement operation on existing gasoline engines by one cylinder at a time deactuating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 1, 1979 Completion Date: Sep 25, 1980

Received by DOE from NBS: Feb 29, 1980

Status: Complete Award Amount: \$65,972 Contract Period:

Development Stage: Prototype Development Sep 25, 1980 - Jun 25, 1982

Summary: A grant of \$65,972 was awarded to develop and test a valve deactivator for internal combustion engines. The invention is available for sale or lease.

=====

DOE # 132 DOE Coordinator D.G.Mello Contact: Michael Knezevich
OERI # 3045 DOE Program Off: CE

Category: Industrial Processes

Title: Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material

Inventor: Michael Knezevich Patent # 4 119 453
State/Country: IN
Company: M. K. Metals, Inc.

Description: Is a system for mechanically pelletizing ferrous and non-ferrous metals and some plastics, grading according to size and then separation according to density by conventional gravity techniques.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 22, 1977 Decision Date:

Received by DOE from NBS: Mar 25, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Other financial commitments prevent inventor from proceeding.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	133	DOE Coordinator	D.G.Mello	Contact:	James V Enright	
OERI #	4641	DOE Program Off:	CE		Autotherm, Inc.	
Category:	Transportation Systems, Vehicles & Components				314 East Main Street	
					P.O. Box #333	
					Barrington	IL 60010
					312-381-6366	
Title:	AUTOTHERM Car Comfort System					

Inventor:	F J Perhats	Patent Applied For
State/Country:	IL	
Company:	Autotherm, Inc.	Grant # FG01-81CS15050

Description: It is an auxiliary coolant circulator for an automobile which will provide heat to the vehicle operator for a period of time without requiring the engine to idle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jul 27, 1978	Completion Date:	Jun 19, 1983
Received by DOE from NBS:	Mar 26, 1980		
Status:	Complete	Award Amount:	\$71,034
		Contract Period:	
Development Stage:	Limited Production/Marketing		Jun 19, 1981 - Jun 19, 1983

Summary: A 24-month grant of \$71,034 was awarded to perform the necessary research and development to ready the invention for the marketplace. A component, the pump, is on the market with sales of \$36,000. An additional \$300,000 in sales, supporting a 5-man operation, has come from Europe and Canada. Product is available for wholesale distribution. To date the company has sold 10K units at \$160 each, altogether saving 0.625 trillion Btu/Yr. They expect to sell 5-10K units/Yr. for the next 5 years.

=====

DOE #	134	DOE Coordinator	D.G.Mello	Contact:	John C Rupert	
OERI #	5239	DOE Program Off:	CE		1511 Grantham Street	
Category:	Buildings, Structures & Components				Saint Paul	MN 55108
					612-645-0414	
Title:	Expanded Polystyrene Bead Insulation System					

Inventor:	John C Rupert	Patent Applied For
State/Country:	MN	
Company:	Rupert Insulation Products, Inc.	Grant # FG01-80CS15027

Description: It is a means for retro-insulating housing walls, utilizing expanded polystyrene bead insulation coated with a flame-retardant adhesive, and applied with a unique blower-mixer nozzle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	May 30, 1979	Completion Date:	Jan 2, 1984
Received by DOE from NBS:	Mar 31, 1980		
Status:	Complete	Award Amount:	\$80,844
		Contract Period:	
Development Stage:	Limited Production/Marketing		Sep 26, 1980 - Dec 31, 1982

Summary: A grant of \$80,844 was awarded to select an adhesive/flame retardant, test it at an independent laboratory, develop the blower system, develop a business plan, and demonstrate the technology. A final report is due. A first commercial sale grossed \$14,000, with total residential sales grossing \$100,000. Firm employs three individuals.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 135 DOE Coordinator D.G.Mello Contact: M Hossein Khorsand
 OERI # 5216 DOE Program Off: CE 33042 Commodore Court
 San Juan Capistrano CA 92675
 - -
 Category: Direct Solar
 Title: Point Focus Parabolic Solar Collector

Inventor: M Hossein Khorsand
 State/Country: CA
 Company: Grant # FG01-82CE15088
 Description: It is a lightweight parabolic solar collector design which uses prestressed structural members and cables to achieve high rigidity at a low cost.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 29, 1979 Completion Date: Jun 22, 1984
 Received by DOE from NBS: Apr 30, 1980
 Status: Complete Award Amount: \$97,892 Contract Period:
 Development Stage: Working Model Jun 22, 1982 - Jun 22, 1984
 Summary: A 24-month grant of \$97,892 was awarded to design, build and analyze a prototype point focus collector.

=====

DOE # 136 DOE Coordinator J. Aellen Contact: Albert S Richardson, Jr.
 OERI # 3885 DOE Program Off: CE 83 Second Avenue
 Burlington MA 01803
 617-862-7200
 Category: Miscellaneous
 Title: Windamper

Inventor: Albert S Richardson, Jr. Patent # 3 440 328
 State/Country: MA
 Company: Richardson Products, Inc. Grant # FGD1-82CE15102
 Description: Wind damper for high voltage electric transmission line to prevent galloping in wind and ice storms

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 25, 1978 Completion Date: Sep 1, 1982
 Received by DOE from NBS: May 8, 1980
 Status: Complete Award Amount: \$76,000 Contract Period:
 Development Stage: Limited Production/Marketing Sep 1, 1982 - Aug 31, 1983
 Summary: A 12-month grant of \$76,000 was awarded to extend the analysis of the windamper antigallop merits from single conductor to bundled conductor applications. To date, a total of 1400 units has been installed with a total market value of \$130,000. The invention is available for licensing, both domestic and foreign.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 137 DOE Coordinator J. Aellen Contact: H Roy Weber
 OERI # 5130 DOE Program Off: CE Box #336
 Kailua HI 96734
 808-262-6548

Category: Industrial Processes

Title: A Portable Pollution Free Automobile Incinerator

Inventor: H Roy Weber Patent Applied For
 State/Country: HI Grant # FG01-81CS15044
 Company: Kailua Auto Wreckers

Description: Portable automobile incinerator

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 17, 1979 Award Date: Jun 20, 1981

Received by DOE from NBS: May 8, 1980

Status: Award Award Amount: \$99,408 Contract Period:

Development Stage: Prototype Development Jun 20, 1981 - Sep 30, 1982

Summary: A 15-month grant of \$99,408 was awarded to fabricate, construct and test, an incinerator to prove the invention is a viable method of reducing scrap cars into satisfactory condition for recycling into the iron and steel industry.

=====

DOE # 138 DOE Coordinator J. Aellen Contact: Bernard Joseph Margowsky

OERI # 1994 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Phantom Tube

Inventor: Gerald R Seeman Patent # 3 956 665
 State/Country: CA Grant # FG01-85CE15235
 Company: Developmental Sciences, Inc.

Description: Phantom tube is a non light emitting, low energy device to be paired with a fluorescent tube in rapid or instant start fixtures. Device completes the electrical circuit to allow fixtures to operate on fewer lamps than original design specified, thus reducing electric power consumption. Product lifetime is virtually unlimited.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 28, 1977 Decision Date: Dec 31, 1981

Received by DOE from NBS: May 28, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: No appropriate DOE support can be identified. Product supports 5 employees and is on the market. The relatively slow sales of 1.5 million units/year appear adequate to support any needed market research the company might wish to initiate.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 139 DOE Coordinator D.R.Craig Contact: Louis L Marton

OERI # 3487 DOE Program Off: CE

Category: Miscellaneous

Title: Transformer With Heat Dissipator

Inventor: Louis L Marton

Patent # 3 659 239 & Others

State/Country: CA

Company:

Description: An improved method for cooling dry-type transformers, thereby increasing their efficiency without increasing their weight and cost.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 16, 1978 Decision Date:

Received by DOE from NBS: May 29, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor does not seek grant money but wishes us to exert legislative influence to require more efficient transformers in general. It does not appear that this service can be provided.

=====

DOE # 140 DOE Coordinator D.G.Mello

Contact: Tony Wilhelm
Wilhelm Engineering Company
707 Second Street
West Ashland WI 54806
715-682-8175

OERI # 3830 DOE Program Off: CE

Category: Industrial Processes

Title: Counter Flow Dual Tube Heat Exchanger

Inventor: W E Mattson

State/Country: MN

Company: Wilhelm Engineering Company

Grant # FG01-82CE15148

Description: It is a simple plastic heat exchanger to preheat ventilating air for poultry or livestock barns.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 6, 1978 Completion Date: Jul 31, 1984

Received by DOE from NBS: Jun 20, 1980

Status: Complete Award Amount: \$49,758 Contract Period:

Development Stage: Concept Definition Sep 22, 1982 - Jul 22, 1983

Summary: A 10-month grant of \$49,758 was awarded to design, fabricate, instrument and operate, a prototype dual tube heat exchanger. The invention is available for licensing. It has proved to be cost effective.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	141	DOE Coordinator	D.G.Mello	Contact:	Samuel Shiber	
OERI #	3673	DOE Program Off:	CE		P. O. Box #371	
					Mundelein	IL 60060
					-	-

Category: Transportation Systems, Vehicles & Components

Title: New Hydrostatic Transmission

Inventor:	Samuel Shiber	Patent Applied For
State/Country:	IL	
Company:		Grant # FGD1-81CS15D64

Description: A continuously variable hydraulic positive displacement transmission with lockup, overdrive, and regenerative braking for automotive and other vehicular uses.

Significant Dates, Status and Summary of Developments:

Form 1D19 Rec'd by NBS:	Mar 6, 1978	Completion Date:	Jul 9, 1981
Received by DOE from NBS:	Jun 23, 1980		
Status:	Complete	Award Amount:	\$95,000
		Contract Period:	
Development Stage:	Concept Development		Jul 9, 1981 - Jul 9, 1983

Summary: A grant of \$95,000 was awarded to design, build and test, a Volkswagen Sirocco with a prototype hydrostatic transmission installed. Project was funded with 90 percent inventor-originated funds and 10 percent DOE funds. Inventor's share was 50 percent domestic and 50 percent foreign funded. Transmission is now available for licensing.

=====

DOE #	142	DOE Coordinator	J. Aellen	Contact:	Anatol Michelson	
OERI #	5822	DOE Program Off:	CE		3235 Pine Valley Drive	
					Sarasota	FL 33579
					-	-

Category: Industrial Processes

Title: Process for Heatless Production of Hollow Items

Inventor:	Anatol Michelson	Patent Applied For
State/Country:	FL	
Company:		Grant # FGD1-81CS15055

Description: A metal casting method for hollow parts

Significant Dates, Status and Summary of Developments:

Form 1D19 Rec'd by NBS:	Sep 24, 1979	Completion Date:	Jul 1, 1981
Received by DOE from NBS:	Jun 26, 1980		
Status:	Complete	Award Amount:	\$108,920
		Contract Period:	
Development Stage:	Prototype Test		Jun 30, 1981 - Dec 31, 1982

Summary: An 18-month grant of \$108,920 was awarded to construct and test a working model to demonstrate the heatless production of hollow casting. The work has been completed. The invention has potential for greatly increasing productivity of the casting process. Inventor interested in licensing.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	143	DOE Coordinator	J Aellen	Contact:	Amar Amancharla	
OERI #	5668	DOE Program Off:	CE		Houston	TX 77052
					713-830-	

Category: Fossil Fuels

Title: Oil Well Pump Jack

Inventor: Robert A Clay
State/Country: CA
Company:

Patent Applied For
Grant # FG01-84CE15188

Description: A new design pump that would replace the conventional beam pumps in pumping oil wells. It utilizes longer strokes than generally used by the beam pumps and has slower rates of acceleration/deceleration, reducing the power required to overcome the inertia of the sucker rods and other moving parts.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 19, 1979 Award Date: Jul 31, 1984

Received by DOE from NBS: Jun 27, 1980

Status: Award Award Amount: \$52,500

Development Stage: Prototype Test

Summary: A phase one grant of \$52,500 was made to perform engineering designs of the pump jack. Phase two will be funded upon availability of funds. Work on phase one is in progress.

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DOE #	144	DOE Coordinator	T.A.Coults	Contact:	Robert C Saunders, Jr.
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OERI # 5652 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: SpaCirc Space Circulation Fan

Inventor: Robert C Saunders, Jr.
State/Country: MD
Company:

Description: The invention is a different type of ceiling fan designed for improved circulation and mixing of air throughout an air conditioned room. The increased air velocity allows the perception of comfort at higher temperatures and humidities.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 9, 1979 Decision Date:

Received by DOE from NBS: Jul 23, 1980

Status: No DOE Support

Development Stage: Concept Development

Summary: Unable to reach agreement on work to be done. Inventor's interest has waned, due to several competitors now in the field and expected high costs of production of the Spacirc. No further action is anticipated.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	145	DOE Coordinator	J. Aellen	Contact:	Robert E Salomon	
OERI #	6213	DOE Program Off:	CE		Chemistry Department	
Category:	Direct Solar				Temple University	
					Philadelphia	PA 19122
					215-787-7125	

Title: Solar Conversion by Concentration Cells with Hydrides

Inventor: Robert E Salomon
 State/Country: PA
 Company:

Grant # FG01-81CS15043

Description: The invention is a hydrogen concentration cell which converts solar energy to electricity by using heat to generate the gas pressure to drive the cell. (It is an electrochemical heat engine with sunlight furnishing the heat.)

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Dec 26, 1979	Completion Date:	Jul 1, 1981
Received by DOE from NBS:	Jul 29, 1980		
Status:	Complete	Award Amount:	\$67,868
		Contract Period:	
Development Stage:	Concept Development		Jul 1, 1981 - Sep 30, 1983

Summary: A 17-month grant of \$67,868 was awarded to build and test a laboratory model of the inventor's system, to determine efficiency and feasibility. Inventor requested an extension through 8/83 to allow summer school student assistance to continue. Inventor interested in industry financial support, and eventual licensing. This project is completed.

=====

DOE #	146	DOE Coordinator	T.A.Coultas	Contact:	Ronald M Hertzfeld	
OERI #	4794	DOE Program Off:	FE		5310 Harvest Hill	
Category:	Fossil Fuels				Suite #285	
					Dallas	TX 75230
					214-386-9311	

Title: Line Integral Method of Magneto-Electric Exploration

Inventor: Sylvain J Pirson
 State/Country: TX
 Company: Independex Inc - (Sweetwater Oil Co)

Patent # 3 943 436
 Grant # FG01-82CE15127

Description: A method of exploring for gas and oil deposits by plotting the intensity and polarities of local perturbations in the earth's magnetic field. These perturbations are caused by naturally occurring electrotelluric (ET) currents associated with the oil and gas.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jan 25, 1979	Completion Date:	Aug 15, 1983
Received by DOE from NBS:	Jul 30, 1980		
Status:	Complete	Award Amount:	\$74,689
		Contract Period:	
Development Stage:	Limited Production/Marketing		Aug 13, 1982 - Aug 15, 1983

Summary: A grant of \$74,689 was awarded to make a priori predictions on at least 10 locations where wildcat wells are planned. Results show not only accuracy of prediction of dry/wet holes, but also predicted depth of drilling required. The inventor has sold about ten projects based on these results. Project is complete.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 147 DOE Coordinator J. Aellen Contact: A. D. Barrett, VP

OERI # 5692 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Railroad Switch Heater

Inventor: Henry Keep, Jr.

Patent Applied For

State/Country: CT

Company: Heat Trace Division, Multistress, Inc.

Description: The invention is an electric resistance heater for attachment to railroad switches. The heater can be activated to prevent ice and snow from clogging the area where the railroad switch is closed or opened.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 4, 1979 Decision Date:

Received by DOE from NBS: Jul 31, 1980

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Inventor advised that DOE would decline funding because the proposed testing of a commercially available device was outside this program's area of interest. Quantities of the device have been sold to Amtrak.

=====

DOE # 148 DOE Coordinator J. Aellen

Contact: Thomas F Rogers

OERI # 5418 DOE Program Off: CE

Process Manager
4625 Roanoke Parkway
Kansas City MO 64112
815-531-9500

Category: Industrial Processes

Title: Reclamation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes

Inventor: Leonard A Duval

Patent # 3 844 943

State/Country: OH

Company: The Pritchard Corporation

Grant # FG01-82CE15084

Description: The invention is a process for steel mills to use in order to recover the energy value of the oil and mill scale from the mill scale produced in rolling mill operations.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 22, 1979 Completion Date: Mar 10, 1982

Received by DOE from NBS: Aug 15, 1980

Status: Complete Award Amount: \$99,000 Contract Period:

Development Stage: Working Model Mar 10, 1982 - Sep 9, 1982

Summary: In FY 82, a 6-month grant of \$99,000 was awarded to test the Duval millscale deciling process, using Duval's pilot plant with a design capacity of 2 tons/hr of oily millscale. In FY 84 the inventor reported to NBS that he had achieved commercial success with the first plant being built in Aurora, Ohio. Others are planned for Chicago, Detroit, Pittsburgh and Hamilton, Ontario. An export license was signed with SPEICHIM in Paris that covers Europe, China and the USSR. Negotiations were underway with C. Itoh of Tokyo. Each plant will require \$5 million capital and 35 employees.

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Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 149 DOE Coordinator D.R.Craig Contact: Ogden H Hammond
 OERI # 5610 DOE Program Off: CE Count Digital, Inc.
 Post Office Box #324
 Monument Beach MA 02553
 617-646-1400

Category: Buildings, Structures & Components

Title: SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)

Inventor: Ogden H Hammond
 State/Country: MA
 Company: Count Digital, Ltd.

Grant # FG01-81CS15038

Description: A system to retrofit residential and other steam heating systems to allow zone heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 6, 1979 Completion Date: Jan 28, 1981

Received by DOE from NBS: Aug 18, 1980

Status: Complete Award Amount: \$91,962 Contract Period:

Development Stage: Concept Development Jan 26, 1981 - Jul 28, 1982

Summary: A grant of \$91,962 was awarded to design, build and test prototype installations in several residences in the Boston area where steam heated homes are numerous and winters severe. Grant is complete, the company made some sales, and is licensing the control system which uses house wiring to convey signals.

=====

DOE # 150 DOE Coordinator D.G.Mello Contact: Edward W Midlam
 OERI # 7141 DOE Program Off: CE 2300 21st Street
 Lake Charles LA 70601
 318-478-7844

Category: Industrial Processes

Title: The Use of Solid Waste Material from a Lubricating Oil and/or Vegetable Oil Refining Operation.

Inventor: Edward W Midlam
 State/Country: LA
 Company:

Grant # FG01-81CS15073

Description: The invention involves the use of solid waste material from a lubricating oil and/or vegetable oil refining operation being used as a raw material for a Portland Cement plant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 16, 1980 Completion Date: Aug 6, 1981

Received by DOE from NBS: Sep 30, 1980

Status: Complete Award Amount: \$64,200 Contract Period:

Development Stage: Production Engineering Aug 6, 1981 - Jun 30, 1983

Summary: A 24-month grant of \$64,200 was awarded to investigate one or more specific marketing opportunities. Unfavorable market conditions prevented inventor from pursuing the project further.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 151 DOE Coordinator J.Aellen Contact: Yao Tzu Li

OERI # 5494 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Film Type Storm Window

Inventor: Yao Tzu Li

Patent # 4 210 191

State/Country: MA

Company: Energy & Innovation, Inc

Description: A plastic film type of storm window that is tensioned at the corners and sealed on the perimeter to produce a wrinkle free and air tight membrane for window insulation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 30, 1979 Decision Date:

Received by DOE from NBS: Sep 30, 1980

Status: No DOE Support

Development Stage: Concept Development

Summary: Inventor sold Product.

=====

DOE # 152 DOE Coordinator D.G.Mello

Contact: David S Majkrzak
345 Cherry Court
West Fargo ND 58078
701-282-5593

OERI # 6439 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Vehicle Exhaust Gas Warm-up System

Inventor: David S Majkrzak

State/Country: ND

Company:

Grant # FGD1-81CS15D63

Description: An accelerated warm-up system for an internal combustion engine which uses the hot exhaust gases to heat the cooling water. Engine cooling water is ducted to a heat exchanger/muffler in the exhaust system during the warm-up period.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 12, 1980 Completion Date: Aug 6, 1981

Received by DOE from NBS: Sep 30, 1980

Status: Complete

Award Amount: \$77,500

Contract Period:

Development Stage: Prototype Development

Aug 6, 1981 - Aug 6, 1983

Summary: A grant of \$77,500 was awarded to design, build and test a prototype model of the vehicle gas warm-up system. ERIP assistance is complete. Other innovations in this area may have made this invention obsolete.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 153 DOE Coordinator D.G.Mello Contact: Carl E Pearl

OERI # 5553 DOE Program Off: CE

Category: Miscellaneous

Title: A New Equipment Design Concept for Storage of Hot Foods

Inventor: Carl E Pearl

State/Country: CA

Company:

Description: A series of food handling systems designed to reduce heat loss/gain during storage or transport. The basic concept is that of including a heat storage material with the food enclosed in an insulated container to allow the food to stay warm/cool longer.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 10, 1979 Decision Date: Feb 1, 1983

Received by DOE from NBS: Sep 30, 1980

Status: No DOE Support

Development Stage: Concept Development

Summary: The inventor has decided to suspend effort on this project in favor of another, more promising invention, not supported by ERIP.

=====

DOE # 154 DOE Coordinator J.Aellen Contact: Forrest E Chancellor

OERI # 5750 DOE Program Off: CE

Category: Fossil Fuels

Title: Rotating Horsehead for Pumping Units

Inventor: Forrest E Chancellor

Patent # 4 121 471

State/Country: CA

Company:

Description: An ellipsoidal head for an oil well pump beam unit used in sucker-rod pumping. The ellipsoidal head increases the strokes of the sucker-rod over that of the conventional "horse" head and thus causes an increase in flow.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 7, 1979 Decision Date: May 14, 1981

Received by DOE from NBS: Oct 29, 1980

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Awaiting revised proposal. Needs Licensing.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	155	DOE Coordinator	J.Aellen	Contact:	James M Cleary	
OERI #	7292	DOE Program Off:	CE		92 McCallum Drive	
Category:	Fossil Fuels				Box #541	
					Falmouth	MA 02541
					617-548-6686	
Title:	Slip Mining					
Inventor:	James M Cleary			Patent #	4 059 309 & Others	
State/Country:	MA			Grant #	FG01-85CE15195	
Company:						
Description:	A method of surface mining coal that involves skidding a series of overburden blocks off the coal. The blocks are buoyantly supported, stabilized and displaced by a dense mud slurry. Slabs of coal uncovered by block movement are floated to the surface of the dense mud and recovered from the surface of the mud filled pit.					

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jul 23, 1980	Award Date:	Aug 28, 1985
Received by DOE from NBS:	Oct 31, 1980		
Status:	Award	Award Amount:	\$69,775
		Contract Period:	
Development Stage:	Concept Development		Dec 10, 1984 -

Summary: A phase one grant of \$25,275 was awarded on December 10, 1984. A phase II grant of \$44,500 was awarded on August 28, 1985.

=====

DOE #	156	DOE Coordinator	J.Aellen	Contact:	James J Dolan	
OERI #	5375	DOE Program Off:	CE		Valjim Corporation	
Category:	Industrial Processes				P. O. Box #5203	
					Westport	CT 06880
					203-259-1249	
Title:	Direct-Current Electrical Heat-Treatment of Continuous Metal Sheets in a Protective Atmosphere.					
Inventor:	James J Dolan			Patent #	4 154 432 & Others	
State/Country:	CT			Grant #	FG01-81CS15058	
Company:	Valjim Corporation					
Description:	A new application of electrical conduction for the continuous heat treatment of rolled steel strip that uses less energy than conventional methods.					

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jul 3, 1979	Completion Date:	Jul 23, 1981
Received by DOE from NBS:	Oct 31, 1980		
Status:	Complete	Award Amount:	\$99,485
		Contract Period:	
Development Stage:	Limited Production/Marketing		Jul 23, 1981 - Jul 23, 1982

Summary: A 12-month grant of \$99,485 was awarded to design a plant for Southwest Pipe Company, prepare a design manual, and to collect data on energy savings. Two installations are now running: one in Texas and one in Alabama. Negotiations underway for three more in Indian Steel Mills.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 157 DOE Coordinator J.Aellen Contact: Albert L McQuillen, Jr
 OERI # 5968 DOE Program Off: CE 1701 Partridge Run Road
 Pittsburgh PA 15241
 412-835-2836

Category: Industrial Processes

Title: Magnaseal Method and Means for Sealing Steel Ingot Casting
 Molds to Stools.

Inventor: Albert L McQuillen, Jr Patent # 3 837 393
 State/Country: PA
 Company: 33 Hundred, Inc. Grant # FG01-81CS15051

Description: A means of sealing steel ingot casting molds to stools by use of fine metallic
 particles and an electromagnetic field to emplace the particles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 1, 1979 Completion Date: Jun 18, 1981

Received by DOE from NBS: Oct 31, 1980

Status: Complete Award Amount: \$91,202 Contract Period:

Development Stage: Prototype Test Jun 18, 1981 - Dec 31, 1982

Summary: A grant of \$91,202 was awarded to build and install a Magnaseal system in the U. S.
 Steel plant in Lorrain, Ohio; and to demonstrate and test it.

=====

DOE # 158 DOE Coordinator G.K.Ellis Contact: Paul F Pugh
 OERI # 2049 DOE Program Off: CE 4082 Sequoyah Road
 Oakland CA 94605
 415-638-5015

Category: Miscellaneous

Title: Energy Conservative Electric Cable System

Inventor: Paul F Pugh Patent Applied For
 State/Country: CA
 Company: Grant # FG01-81CS15074

Description: A low-loss shielded power cable using a naturally cooled sodium conductor and
 a pressurized gas insulator.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 13, 1977 Award Date: Sep 16, 1981

Received by DOE from NBS: Oct 31, 1980

Status: Award Award Amount: \$140,000 Contract Period:

Development Stage: Limited Production/Marketing Sep 16, 1981 - Mar 31, 1983

Summary: A grant of \$140,000 was awarded to construct and lay cable from the mainland to
 Alcatraz Island, off the coast of California. Inventor will also build and conduct
 lab tests on high voltage cable for subsequent evaluation by independent third
 party. The work has been delayed for several reasons and is still in progress. Cable
 has been approved under the National Electric Code. Inventor negotiating with
 venture capital sources to raise \$4.5 million to build new plant and set up national
 distribution network.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	159	DOE Coordinator	J.Aellen	Contact:	William D Gramling	
OERI #	5380	DOE Program Off:	CE		5144 Newport Avenue	
					Chevy Chase	MD 20016
					301-686-4125	

Category: Fossil Fuels

Title: Non-Tubing Type Lift Device, Described as the NTT Rabbit

Inventor:	William D Gramling	Patent #	4 113 010 & Others
State/Country:	MD		
Company:	Gramling Engineering	Grant #	FG01-81CS15062

Description: A gas powered lift device designed to collect oil from low producing (or non-producing) wells. It is a piston device which is lowered inside the oil well casing into the liquid. A pressure operated valve closes, the gas pressure below increases, and the device rises lifting the fluid trapped above.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1979 Completion Date: Jul 24, 1981

Received by DOE from NBS: Nov 25, 1980

Status: Complete Award Amount: \$71,298 Contract Period:

Development Stage: Production & Marketing Jul 24, 1981 - Apr 24, 1983

Summary: A grant of \$71,298 was awarded to modify, design, install and test the device in several gas/oil wells in Glenville, West Virginia and to investigate and test the feasibility of installing the devices in other areas. After several modifications the unit was tested and operates successfully. However, there appears to be no market for this invention.

=====

DOE #	160	DOE Coordinator	D.R.Craig	Contact:	Leon Lazare	
OERI #	6900	DOE Program Off:	CE		c/o The Puraq Company	
					111 Hanna's Road	
					Stamford	CT 06903
					203-322-4125	

Category: Buildings, Structures & Components

Title: High Efficiency Absorption Refrigeration Cycle

Inventor:	Leon Lazare	Grant #	FG01-81CS15046
State/Country:	CT		
Company:	The Puraq Company		

Description: An improved absorption refrigeration cycle employing a novel combination of absorbent and refrigerant fluids. Both a simple stage and two-stage cycle system are presented.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 22, 1980 Completion Date: Apr 30, 1981

Received by DOE from NBS: Nov 25, 1980

Status: Complete Award Amount: \$87,537 Contract Period:

Development Stage: Engineering Design Apr 30, 1981 - Apr 30, 1982

Summary: A grant of \$87,537 was awarded for a plan leading to the installation of the system in four chemical plants to demonstrate the technical and economic feasibility of the process when applied to four different, but representative chemical lines. The grant is complete. Best market for the technology was found to be in ammonia plants. Sales have not yet been closed.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 161 DOE Coordinator J.Aellen Contact: Anthony A duPont
DuPont Aerospace Company, Inc
OERI # 854 DOE Program Off: FE 1111 East Wakeham, Suite J
Santa Ana CA 92705
Category: Fossil Fuels 714-953-4125
Title: duPont Connell Energy Coal Gasification Process

Inventor: Anthony A duPont Patent Applied For
State/Country: CA Grant # FG01-81CS15068
Company: duPont Connell Energy
Description: A method of making low-to-medium Btu gas from coal is described. A key feature is control of retort heat fluxes.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 31, 1976 Award Date: Aug 5, 1981
Received by DOE from NBS: Nov 28, 1980
Status: Award Award Amount: \$98,074 Contract Period:
Development Stage: Working Model Aug 5, 1981 - Feb 5, 1983
Summary: A grant of \$98,074 was awarded to design, build, and test a laboratory scale model of the inventor's concept.

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DOE # 162 DOE Coordinator D.R.Craig Contact: Lemuel Leslie Ply
Route #1, Box #354-E
OERI # 6992 DOE Program Off: CE Wimberly TX 78676
512-847-9885
Category: Industrial Processes
Title: Tubular Pneumatic Conveyor Pipeline

Inventor: Lemuel Leslie Ply Patent # 4 116 491
State/Country: TX Grant # FG01-82CE15128
Company:
Description: A pneumatic tubular conveyor pipeline for transporting dry granular materials such as coal, barite or cement over long distances. The pipeline has an outer impervious pipe and an inner porous pipe radially spaced.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 23, 1980 Completion Date: Sep 30, 1984
Received by DOE from NBS: Nov 28, 1980
Status: Complete Award Amount: \$44,480 Contract Period:
Development Stage: Concept Development Sep 30, 1982 - Sep 30, 1984
Summary: A grant of \$44,480 was awarded to design, build, and test a prototype section of pipeline using several 10-foot sections of pipe. This project is complete.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 163 DOE Coordinator D.R.Craig Contact: Dennis D Howard
 200 West Grandview Boulevard
 OERI # 6831 DOE Program Off: CE Erie PA 16512
 814-868-3611

Category: Buildings, Structures & Components

Title: Thermotropic Plastic Films

Inventor: Dennis D Howard
 State/Country: PA
 Company: Hughson Chemicals Grant # FG01-81CS15045

Description: A thermotropic plastic film which can be formulated to become opaque above a particular temperature. When sealed between two layers of glass it could serve as a window shade for greenhouses or other solar heated structures.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 15, 1980 Completion Date: Jul 13, 1981

Received by DOE from NBS: Dec 4, 1980

Status: Complete Award Amount: \$99,093 Contract Period:

Development Stage: Engineering Design Jul 9, 1981 - Jul 13, 1982

Summary: A grant of \$99,093 was given to perform research and development leading to a practical design with special attention given to edge sealing and general weather proofing of the laminated panes. The grant is complete; double glass enclosures were found to be too costly. Inventor is using his own funds to develop an embossed plastic seal via small compartments of fluid separated by heat-sealed pattern. Company seeks joint venture and/or licensing.

=====

DOE # 164 DOE Coordinator D.R.Craig Contact: John D Gill
 Elastomer Energy Recovery Inc
 OERI # 6433 DOE Program Off: CE 419 Fourth Street
 Annapolis MD 21403
 301-263-5735

Category: Transportation Systems, Vehicles & Components

Title: Elastomer Energy Recovery Elements and Vehicle Component Applications

Inventor: John D Gill
 State/Country: MD
 Company: Elastomer Energy Recovery Inc Grant # FGD1-81CS15054

Description: A regenerative braking device, for a small urban automobile, that stores energy during downhill operation for additional acceleration and power when needed with a minimum of fuel consumption. Energy is mechanically stored by an elastomeric storage device.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 12, 1979 Completion Date: Jul 9, 1981

Received by DOE from NBS: Dec 4, 1980

Status: Complete Award Amount: \$89,507 Contract Period:

Development Stage: Concept Development Jul 9, 1981 - Apr 15, 1982

Summary: A grant of \$89,507 was awarded to design, build, and test a scale model to determine optimum design after which a full scale model will be built and tested. The grant is complete. Inventor now seeks \$100,000 private sector support to demonstrate proof of concept of a two-person, enclosed, three wheel moped using a small gasoline motor. Energy is stored in elastomer via pedals on downhill runs and upon deceleration.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 165 DOE Coordinator D.G.Mello Contact: Wu-Chi Chen
 859 Brittmore Road
 OERI # 6985 DOE Program Off: CE Houston TX 77079
 713-461-6811
 Category: Fossil Fuels
 Title: Process for Recovering Hydrogen and Elemental Sulfur from
 Hydrogen Sulfide and/or Mercaptans-Containing Hydrogen
 Inventor: Wu-Chi Chen Patent # 4 066 739
 State/Country: TX Grant # FG01-81CS15065
 Company:
 Description: A new process for recovering hydrogen and elemental-sulfur from hydrogen
 sulfide using iodine slurry

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 16, 1980 Completion Date: Oct 29, 1984
 Received by DOE from NBS: Dec 29, 1980
 Status: Complete Award Amount: \$70,000 Contract Period:
 Development Stage: Concept Development Aug 4, 1981 - Jan 15, 1983

Summary: A grant of \$70,000 was awarded to investigate the feasibility of the process by
 performing laboratory and economic studies. Inventor is discussing licensing
 possibilities with private research corporations. The project is now complete.

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DOE # 166 DOE Coordinator D.R.Craig Contact: Robert F Evans
 Box #45674
 OERI # 4656 DOE Program Off: FE Dallas TX 75235
 214-943-2181
 Category: Fossil Fuels
 Title: Borehole Angle Control
 Inventor: Robert F Evans
 State/Country: TX Grant # FG01-81CS15067
 Company:
 Description: A modified oil well drill bit which can correct the course of the borehole as
 the hole is being drilled. It selectively injects cuttings to one side of the
 drill bit to provide a wedging action between the bit and the borehole.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 27, 1978 Award Date: Jul 28, 1981
 Received by DOE from NBS: Dec 29, 1980
 Status: Award Award Amount: \$98,148 Contract Period:
 Development Stage: Concept Development Jul 28, 1981 - Mar 1, 1984

Summary: A grant of \$98,148 was awarded to design, fabricate and conduct field tests on the
 drill bits and control system. DOE waiting from a final report from the inventor.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 167 DOE Coordinator D.R.Craig Contact: Edward B Connors
OERI # 6483 DOE Program Off: CE 1337 Holman
Pocatello ID 83201
208-237-6661
Category: Industrial Processes
Title: Vaned Pipe for Pipeline Transport of Solids

Inventor: Edward B Connors
State/Country: ID
Company: Grant # FGD1-82CE15D83

Description: A slurry pipeline with helical vanes to maintain a rotating motion in the slurry to hold the solids in suspension in the laminar flow range, thus increasing the range of flow rates at which solids can be transported without settling.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 25, 1980 Completion Date: Oct 1, 1983
Received by DOE from NBS: Jan 19, 1981
Status: Complete Award Amount: \$111,577 Contract Period:
Development Stage: Engineering Design Aug 11, 1982 - Aug 30, 1984

Summary: A grant of \$111,577 was awarded to design, build and test several configurations of the basic idea under various flow conditions with various slurry mixtures. The project was completed on October 1st, 1983.

=====

DOE # 168 DOE Coordinator T.A.Coultas Contact: Spencer Kim Haws
OERI # 6783 DOE Program Off: CE P. O. Box #315
Mesa WA 99343
509-265-6661
Category: Buildings, Structures & Components
Title: The Hot Water Saver

Inventor: Spencer Kim Haws Patent Applied For
State/Country: WA
Company: Alternative Energy Resources Inc Grant # FGD1-82CE15134

Description: Modifications to a residential hot water system so that hot water trapped in the pipes between the water-heater and the point of use is returned back to the water heater thus reducing heat loss and water consumption.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 7, 1980 Completion Date: Oct 9, 1984
Received by DOE from NBS: Jan 28, 1981
Status: Complete Award Amount: \$90,000 Contract Period:
Development Stage: Limited Production/Marketing Sep 30, 1982 - Sep 29, 1983

Summary: A grant of \$90,000 was awarded to laboratory and field test the unit, and to document savings and find optimum application. The test results showed 17% of the energy used for water heating could be saved by using this invention. Mr. Haws sold his invention to Metlund Enterprises of Stockton, CA in exchange for royalties. The water savers are currently being marketed. The project is complete.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 169 DOE Coordinator D.R.Craig Contact: B O Combs

OERI # 6239 DOE Program Off: CE

Category: Industrial Processes

Title: MIRAFOUNT

Inventor: Mervin W Martin
State/Country: MO
Company: MIRACO Manufacturing

Patent # 3 745 977

Description: A cattle waterer which is functional in the coldest climate without the use of an immersed electric or gas heater. It consists of a heavily insulated tank with a floating, insulated cover and a float valve assembly.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 27, 1979 Decision Date:

Received by DOE from NBS: Jan 30, 1981

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: The inventor wanted support for a marketing study, which it is not DOE policy to provide.

=====

DOE # 17D DOE Coordinator J.Aellen Contact: Thomas R Mee

OERI # 5622 DOE Program Off: CE

Category: Industrial Processes

Title: Fog System - Low Energy Freeze Protection for Agriculture

Inventor: Thomas R Mee
State/Country: CA
Company: Mee Industries Inc

Patent # 4 D39 144 & Others

Description: A low energy-consuming agricultural freeze protection system using a non-polluting man-made water fog to cover crops and prevent heat loss and freeze damage. The fog system is designed to use significantly less energy than oil-burning agricultural heaters. The inventor has also developed instruments to increase quality of the clouds.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 22, 1979 Decision Date: Apr 23, 1981

Received by DOE from NBS: Jan 30, 1981

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Inventor reports net income of \$400,000 in 1984 with gross sales of \$1.9 million. First three months of 1985 have yielded \$700,000 gross. Sales have doubled annually over the last three years. Firm now employs thirty individuals.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 171 DOE Coordinator D.R.Craig Contact: Karakian Bedrosian
 OERI # 6950 DOE Program Off: CE Sherwood Court NJ 07620
 Alpine
 201-767-3260

Category: Industrial Processes

Title: A Method of Preserving Fruits and Vegetables without Refrigeration

Inventor: Karakian Bedrosian Patent # 4 079 152
 State/Country: NJ
 Company: Grant # FG01-81CS15061

Description: A method for preserving fruits and vegetables without refrigeration by using controlled atmosphere packages to keep oxygen levels low and the water vapor and carbon dioxide levels at desired optimums.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 28, 1980 Completion Date: Aug 25, 1981

Received by DOE from NBS: Feb 23, 1981

Status: Complete Award Amount: \$97,300 Contract Period:

Development Stage: Limited Production/Marketing Aug 25, 1981 - Oct 31, 1982

Summary: A grant of \$97,300 was awarded to conduct laboratory studies and field trials of various package configurations suitable for shipment of tomatoes by truck from point of growth to point of consumption. Demonstrations were successful. Contracts have been made with four east coast food chains to ship tomatoes from Florida under the brand name of TomAHtoes. Other grocery chains are interested.

=====

DOE # 172 DOE Coordinator D.G.Mello Contact: Edward A Griswold
 OERI # 4255 DOE Program Off: CE Special Equipment Company
 26022 Cape Drive, #G
 Laguna Niguel CA 92677
 714-581-6730

Category: Industrial Processes

Title: GEM Electrostatic Filtration System

Inventor: Edward A Griswold Patent # 3 891 528 & Others
 State/Country: CA
 Company: Special Equipment Company Grant # FG01-82CE15139

Description: An electrostatic filter for removing suspended particles from fluids such as hydraulic fluids, liquid fuels, engine lubricants and waste oil.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 3, 1978 Completion Date: Sep 29, 1982

Received by DOE from NBS: Feb 26, 1981

Status: Complete Award Amount: \$88,285 Contract Period:

Development Stage: Prototype Test Oct 1, 1982 - Jun 30, 1983

Summary: An 8-month grant of \$88,285 was awarded for demonstration of the GEM filtration system. The unit was designed and installed on several types of diesel engines under controlled conditions. Filtered material was analyzed. ERIP assistance is complete.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 173 DOE Coordinator J.Aellen Contact: Bill Burley
 OERI # 6277 DOE Program Off: CE Peterson Drive PA 15905
 814-288-1750
 Category: Buildings, Structures & Components
 Title: Thermal Ice Cap

Inventor: Bill Burley
 State/Country: PA
 Company:

Grant # FG01-81CS15D66

Description: An insulating blanket to reduce refrigeration loads in ice skating rinks during periods of non-use, combined with an advanced method of applying and removing the 17,000 sq. ft of thermal insulation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 7, 1980 Completion Date: Aug 10, 1981

Received by DOE from NBS: Feb 26, 1981

Status: Complete Award Amount: \$79,726 Contract Period:

Development Stage: Working Model Aug 19, 1981 - May 15, 1982

Summary: A grant of \$79,726 was awarded to build and test a prototype model of the thermal ice cap, and was successfully completed. Energy savings were experimentally determined to be almost exactly as predicted by NBS analysis. This experimental device is still in use on the Mall in Washington, DC. Inventor seeks opportunities to direct sales.

=====

DOE # 174 DOE Coordinator J.Aellen Contact: Gene Plattner
 OERI # 6241 DOE Program Off: CE
 Category: Buildings, Structures & Components
 Title: Skate on Plastic Ice Skating System

Inventor: E O Nathaniel
 State/Country: MO
 Company: Skate-On, Inc.

Patent # 4 030 729

Description: A non-refrigerated plastic skating surface to replace energy intensive ice skating surfaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 31, 1979 Decision Date: Sep 28, 1981

Received by DOE from NBS: Mar 5, 1981

Status: No DOE Support

Development Stage: Limited Production/Marketing

Summary: Invention coordinator and inventor agreed to scope of work for a grant. Prior funding by the Small Business Administration has led to sales of some units. Units were not a commercial success because of perceived "extra skating effort".

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	175	DOE Coordinator	J. Aellen	Contact:	W W Seward	
OERI #	6931	DOE Program Off:	CE		c/o DASH, Inc.	
Category:	Industrial Processes				1303 Dug-Gap Road	
					Dalton	GA 30720
					404-278-2556	
Title:	A Low-Energy Carpet Backing System					

Inventor:	Den M Acres	Patent Applied For
State/Country:	GA	
Company:	DASH, Inc.	Grant # FGD1-81CS15070

Description: A low energy carpet backing system which uses a hot-melt thermoplastic coating. The hot-melt coating replaces the present latex adhesive coating which locks the tufts or stitches into the primary backing fabric.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 5, 1980 Completion Date: Aug 1, 1981

Received by DOE from NBS: Mar 26, 1981

Status: Complete Award Amount: \$79,173 Contract Period:

Development Stage: Prototype Development Aug 1, 1981 - Jan 31, 1983

Summary: A grant of \$79,173 was awarded and completed to refit a carpet backing machine with automatic control elements and test on a variety of carpet products. Grantee intends to market the product directly to carpet mills, and predicts an estimated 86% energy savings in manufacture of coated carpeting. Commercial viability of the technology was demonstrated. Inventor is in commercial production. He seeks venture capital assistance.

=====

DOE #	176	DOE Coordinator	J. Aellen	Contact:	Dale Flickinger
OERI #	7428	DOE Program Off:	CE		
Category:	Buildings, Structures & Components				
Title:	Self-Contained, Water Proof, Stoker Fired, Fully Automatic, Portable Solid Fuel Furnaces				
Inventor:	John D. Finnegan				
State/Country:	MN				
Company:	Solid Fuel Systems, Inc.				

Description: An automatically fired portable furnace for burning coal and agricultural waste (e.g. corn, wood waste, poultry manure) for use in drying grain and heating homes and buildings.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 18, 1980 Decision Date: Sep 22, 1981

Received by DOE from NBS: Apr 3, 1981

Status: Decision Phase

Development Stage: Working Model

Summary: Inventor intends to sell through heating contractors. Marketing plan is available.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 177 DOE Coordinator T.A.Coultas Contact: Robert John Starr
 OERI # 6040 DOE Program Off: CE R.F.D.
 Sutton VT 05867
 802-626-8045

Category: Direct Solar

Title: The Solar I Option

Inventor: Robert John Starr
 State/Country: VT
 Company:

Grant # FG01-82CE15140

Description: A solar heating system using commercially available collectors and components and a concrete floor slab as a heat storage device and heat exchanger.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 3, 1979 Completion Date: Aug 15, 1984

Received by DOE from NBS: May 7, 1981

Status: Complete Award Amount: \$52,960 Contract Period:

Development Stage: Limited Production/Marketing Sep 24, 1982 - Jun 30, 1984

Summary: A grant of \$52,960 was awarded to test the effectiveness of a previously installed system. The University of Massachusetts furnished instrumentation, data analysis and computer programs for future design analysis. Energy savings were essentially as predicted. Some sales have been made, but generally "solar" market is slow. This project is completed.

=====

DOE # 178 DOE Coordinator D.G.Mello Contact: John W North
 OERI # 7726 DOE Program Off: CE J W North Company
 c/o Silica-North, Ltd.
 P O Box #838
 Tuscombia AL 35674
 205-381-3582

Category: Industrial Processes

Title: Process and Apparatus for Producing Cellulated Vitreous Refractory Material

Inventor: John W North Patent # 4 212 635 & Others
 State/Country: GA
 Company: J W North Company Grant # FG01-82CE15117

Description: A process and apparatus to produce cellular vitreous refractory material in prescribed shapes lighter than conventional brick or tile and more impermeable. The material will have high structural strength and will be highly insulative and light weight.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 30, 1980 Completion Date: Jul 23, 1984

Received by DOE from NBS: Apr 15, 1981

Status: Complete Award Amount: \$94,688 Contract Period:

Development Stage: Engineering Design Sep 8, 1982 - Sep 8, 1983

Summary: A 12-month grant of \$94,688 was awarded to design, build and operate a pilot plant for manufacture of cell glass building material. There appears to be no market for this product.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE #	179	DOE Coordinator	T.A.Coultas	Contact:	Charles E Edwards	
OERI #	7158	DOE Program Off:	CE		Solex Corporation	
Category:	Direct Solar				52 Meadowcroft Street	
					Lowell	MA 01852
					617-459-3582	
Title:	Development and Commercialization of Low Cost, Non-Metallic, Solar Systems					
Inventor:	Charles E Edwards			Patent Applied For		
State/Country:	MA			Grant #	FG01-81CS15071	
Company:	Solex Corporation					
Description:	A solar hot water heating system consisting of a non-metallic flat plate solar collector made from Ethylene-Propylene-Diene monomer and non-pressurized thermal storage.					

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Jun 19, 1980	Completion Date:	Jan 3, 1984
Received by DOE from NBS:	Apr 17, 1981		
Status:	Complete	Award Amount:	\$99,999
		Contract Period:	
Development Stage:	Prototype Development		Aug 17, 1981 - Jan 3, 1984

Summary: A grant of \$99,999 was awarded to Solex Corporation to finalize design and manufacturing methods for a low cost solar collector. Prototypes were manufactured and tested for efficiency and weatherability. The inventor got \$500,000 over a 5-year contract in Saudi Arabia. Governments of Saudi Arabia and Jordan have indicated interest in licensing his technology. He has received numerous inquiries about his technology from all over the world.

=====

DOE #	180	DOE Coordinator	T.A.Coultas	Contact:	Richard E Dame	
OERI #	2116	DOE Program Off:	CE		10701 Harper Avenue	
Category:	Direct Solar				Silver Spring	MD 20901
					301-681-6903	
Title:	Adjustable Solar Concentrator (ASC)					
Inventor:	Richard E Dame			Patent Applied For		
State/Country:	MD			Grant #	FG01-81CS15172	
Company:						
Description:	A Concentrating Solar Collector using movements and loads on edges of elastic sheets to form cylindrical parabolic reflector.					

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Apr 27, 1977	Completion Date:	Aug 15, 1984
Received by DOE from NBS:	Apr 20, 1981		
Status:	Complete	Award Amount:	\$97,066
		Contract Period:	
Development Stage:	Working Model		Aug 26, 1981 - Dec 28, 1983

Summary: A grant of \$97,066 was awarded to develop a fabrication technique for a low-cost, high-performance adjustable concentrating solar collector. Effort successful, but market for medium-temperature collectors is very poor. The project is completed.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 181 DOE Coordinator J.Aellen Contact: Eskil L Karlson
 OERI # 8061 DOE Program Off: CE 4634 State Street PA 16509
 Erie 814-868-1121
 Category: Miscellaneous
 Title: The Karlson Ozone Sterilizer

Inventor: Eskil L Karlson Patent # 3 719 017 & Others
 State/Country: PA Grant # FG01-82CE15082
 Company:

Description: An ozone sterilizer for medical use in both field and hospital. It is low-powered and lightweight. It sterilizes in less than ten minutes, requires no steam and can automatically package sterilized instruments for storage up to several months.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 9, 1981 Completion Date: Apr 27, 1982

Received by DOE from NBS: May 29, 1981

Status: Complete Award Amount: \$133,304 Contract Period:

Development Stage: Prototype Development May 1, 1982 - May 1, 1984

Summary: a 24-month grant of \$133,304 was awarded to design, develop, and test the Karlson ozone sterilizer system. Inventor seeks venture capital and/or licensing for third world and other markets. This project is completed.

=====

DOE # 182 DOE Coordinator J.Aellen Contact: Robert F Evans
 OERI # 7089 DOE Program Off: CE Box #62 CA 90637
 La Mirada 213-697-8486
 Category: Other Natural Sources
 Title: Improved Seal for Geothermal Drill Bit

Inventor: Robert F Evans Patent Applied For
 State/Country: CA Grant # FG01-82CE15104
 Company:

Description: A new type of sealing arrangement for the cone bearings of a standard rotary drill bit used for geothermal exploration which prolongs the bearing life for a given load and rotary speed.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 3, 1980 Award Date: Aug 26, 1982

Received by DOE from NBS: May 29, 1981

Status: Award Award Amount: \$94,898 Contract Period:

Development Stage: Concept Development Sep 1, 1982 - Aug 31, 1983

Summary: A 12-month grant of \$94,898 was awarded to select by research the best elastomer for use as a bearing seal, and then to test it in the laboratory and in the field. Inventor has made no decision yet on marketing strategy.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 183 DOE Coordinator T.A.Coulas Contact: E. Stephen Miliaras
OERI # 5961 DOE Program Off: CE c/o Energotechnology Corp.
Category: Industrial Processes 238 Main Street, Suite #514
Cambridge MA 02142
617-492-3700
Title: Increased Vapor Generator Feature. Reheat Vapor Generator

Inventor: E. Stephen Miliaras Patent # 3 826 D93 & Others
State/Country: MA Grant # FG01-82CE15194
Company: Energotechnology Corp.

Description: A method to provide peak power more economically from a base steam/turbine electric plant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 16, 1979 Completion Date: Jun 7, 1982
Received by DOE from NBS: Jun 18, 1981
Status: Complete Award Amount: \$98,977 Contract Period:
Development Stage: Engineering Design Jun 7, 1982 - Dec 31, 1983

Summary: A grant of \$98,977 was awarded to design the system for a specific installation that will need increased capacity. For the purpose, negotiations are under way with Southern California Edison. Extensive subcontracting of the installation will be done by Dynatech R & D of Boston. Design completed and 10% capacity increase predicted. Construction awaits SCE needs for additional capacity. The project is completed.

=====

DOE # 184 DOE Coordinator J.Aellen Contact: Nathan Gold
OERI # 2111 DOE Program Off: CE
Category: Combustion Engines & Components
Title: Coasting Fuel Shutoff

Inventor: Nathan Gold
State/Country: CA
Company:

Description: A device suitable for new production or retrofit to turn off the fuel during coasting conditions for automobiles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 27, 1977 Decision Date: Jun 30, 1981
Received by DOE from NBS: Jun 23, 1981
Status: Analysis
Development Stage: Prototype Test

Summary: Several contacts have been made with the inventor, none of which elicited a response. Other similar devices are now on the market.

=====

DOE # 185 DOE Coordinator T.A.Coultas Contact: Charles Bach

OERI # 2443 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Insulated Garage Door

Inventor: Cecil H Wolf

State/Country: IL

Company:

Patent Applied For

Description: An insulated overhead roll-up garage door with special seals to reduce direct heat transmission and infiltration. The door is sectionalized and is comprised of pivotally connected panels each having a cavity filled with insulation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 11, 1977 Decision Date: Aug 15, 1981

Received by DOE from NBS: Jul 27, 1981

Status: Analysis

Development Stage: Working Model

Summary: Inventor has yet to furnish an acceptable proposal or business plan to DOE.

=====

DOE # 186 DOE Coordinator T.A.Coultas Contact: Ronald Hertzfeld

OERI # 7361 DOE Program Off: FE

Category: Fossil Fuels

Title: Oil Recovery by In-Situ Exfoliation Drive

Inventor: Sylvain J Pirson

State/Country: TX

Company: Independex Inc - (Sweetwater Oil Co)

Description: A process for recovering oil in-situ from oil shale which involves alternatively heating and cooling a rubble chamber to exfoliate the crushed rock. The rock releases hydrocarbons which are then pumped to the surface.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 31, 1980 Decision Date: Aug 5, 1981

Received by DOE from NBS: Jul 28, 1981

Status: Analysis

Development Stage: Concept Development

Summary: The inventor has chosen not to pursue this idea at this time, probably because the National interest in shale oil is very low. He is concentrating on #146 which has also been recommended to ERIP.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 187 DOE Coordinator T.A.Coulter Contact: Lewis W Parker

OERI # 3145 DOE Program Off: CE

Category: Miscellaneous

Title: Variable Field Induction Motor

Inventor: Lewis W Parker

Patent Applied For

State/Country: FL

Company: Parker Electronics, Inc.

Description: A means of controlling the field current in an AC induction motor to improve the efficiency under partial load conditions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 7, 1977 Decision Date: Aug 7, 1981

Received by DOE from NBS: Aug 6, 1981

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE. Inventor is marketing the product in China, and is also attempting to market the product domestically with applications to typewriters and DC motors. He has not yet submitted a written proposal.

=====

DOE # 188 DOE Coordinator T.A.Coulter

Contact: John C Haspert

OERI # 7486 DOE Program Off: FE

Underground Systems

P. O. Box #1252

735 West Duarte Road

Arcadia

CA 91006

213-445-0030

Category: Fossil Fuels

Title: Remote Controlled Underground Mining System for Horizontal or Pitching Seams

Inventor: John C Haspert

Patent Applied For

State/Country: CA

Company: Underground Systems

Grant # FG01-82CE15130

Description: A remote controlled underground mining system which uses a unique guidance system for directional drilling of horizontal and pitching seams. Gaseous deposits can be mined without exposure of manpower to hazards.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 8, 1980 Completion Date: Aug 16, 1982

Received by DOE from NBS: Aug 28, 1981

Status: Complete

Award Amount: \$98,251

Contract Period:

Development Stage: Working Model

Aug 16, 1982 - Nov 16, 1983

Summary: A grant of \$98,251 was awarded to design special mining equipment, specifying standard parts that are required to build the remote mining system. Grant completed. Designs and drawings submitted to DOE. There is no obvious commercial interest.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 189 DOE Coordinator T.A.Coultras Contact: Gerald Eastman
P. O. Box #145
OERI # 7658 DOE Program Off: FE Ochelata OK 74051
918-535-2393

Category: Miscellaneous

Title: Pump Jack

Inventor: Gerald Eastman
State/Country: OK
Company:

Grant # FG01-82CE15087

Description: An oil well pumping system in which a hydraulic pump drives a double-acting hydraulic cylinder in an upward motion. During the down-stroke the pressure below the piston is bled through a flow control valve.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 10, 1980 Completion Date: Jun 15, 1982

Received by DOE from NBS: Aug 31, 1981

Status: Complete Award Amount: \$83,604 Contract Period:

Development Stage: Prototype Test Jun 15, 1982 - Dec 15, 1983

Summary: A grant of \$83,604 was awarded to field test and document the results of testing several of these units at varying depths from 2000 to 7000 feet. Rhino Engineering is supervising the tests and documenting the results. After several failures and corrections, units operated trouble free for 10 months. Medium-sized company seeks license from inventor. This project is complete.

=====

DOE # 190 DOE Coordinator T.A.Coultras Contact: W N Lawless
Lake Shore Ceramics, Inc
OERI # 7963 DOE Program Off: CE 64 East Walnut Street
Westerville OH 43081
614-891-2243

Category: Miscellaneous

Title: Oxygen-Conducting Material and Oxygen-Sensing Method

Inventor: W N Lawless
State/Country: OH
Company: Lake Shore Ceramics, Inc

Grant # FG01-82CE15098

Description: An improved oxygen sensing device formed by tape casting an oxygen-conducting material into a dense ceramic body with metal electrodes interdispersed between ceramic layers.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 7, 1981 Completion Date: May 18, 1982

Received by DOE from NBS: Sep 30, 1981

Status: Complete Award Amount: \$89,076 Contract Period:

Development Stage: Engineering Design May 18, 1982 - May 17, 1983

Summary: A grant of \$89,076 was awarded to fabricate and test several ceramic compositions that will be useful for oxygen sensing and possibly be useful as a fuel cell material. First items fabricated under subcontract by Penn State U. are promising. The potential fuel cell application was identified in ERIP's pilot testing of licensing opportunities, the inventor being told that it represented a potential significant advance in state-of-the-art for fuel cells. As indicated, recent tests have confirmed this. This project has been completed.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 191 DOE Coordinator J.S.Dhillon Contact: William Lake
 OERI # 4890 DOE Program Off: CE Manco Corporation
 P O Box #1574
 Walla Walla WA 99362
 509-529-2243

Category: Buildings, Structures & Components

Title: Rotary Heat Pump Air Conditioner, Heater and Ventilator for
 Automotive, Mobile and Stationary Use.

Inventor: Milton Pravda Patent # 3 740 966
 State/Country: WA
 Company: Manco Corporation Grant # FG01-84CE15176

Description: The invention is an air conditioning unit for mobile or internal stationary
 application, utilizing waste heat from an internal combustion engine. The
 refrigeration cycle is a conventional lithium-bromide absorption cycle.
 Various cycle components are enclosed in a hermetic cylinder, which is rotated
 by an electric motor. Heat is absorbed or rejected by rotating finned
 surfaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 13, 1979 Award Date: Jul 26, 1984

Received by DOE from NBS: Sep 30, 1981

Status: Award Award Amount: \$29,900 Contract Period:

Development Stage: Prototype Test Jul 26, 1984 -

Summary: A phase one grant of \$29,900 was awarded on July 26th, 1984. Phase one funds have
 been used to modify the heat exchanger design and test it in a commercial dryer
 exhaust for performance and efficiency. The test results are encouraging. Lint and
 dust particles do not adhere to the surface, thus keeping its efficiency high in
 service. A detailed mathematical analysis has been prepared for the rotary heat
 pump. Phase II will be initiated on receipt of a suitable work proposal for building
 and testing a prototype.

=====

DOE # 192 DOE Coordinator D.G.Mello Contact: Donald C Lewis
 OERI # 7943 DOE Program Off: CE P. O. Box #1107
 Bangor ME 04401
 800-648-9200

Category: Miscellaneous

Title: Closed Cycle Dehumidification Clothes Dryer

Inventor: Donald C Lewis
 State/Country: ME
 Company: NYLE Corporation Grant # FG01-82CE15100

Description: A clothes dryer that uses a vapor compression refrigeration cycle to
 dehumidify the air that passes through the dryer. Air temperature will
 gradually increase as the condenser restores heat lost to the evaporator and
 adds energy introduced into the refrigerant by the compressor.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 30, 1980 Completion Date: Jun 15, 1983

Received by DOE from NBS: Oct 7, 1981

Status: Complete Award Amount: \$81,648 Contract Period:

Development Stage: Concept Development Jul 16, 1982 - Jun 15, 1983

Summary: An 8-month grant of \$81,648 was awarded to design, construct and test the clothes
 dryer. Preliminary tests of the unit, which operates at 115v, show 65-70 percent
 energy savings over the conventional dryer. Inventor expects profitable operation at
 1% of total dryer market, and is looking for licensing opportunities with eventual
 sell-out if market share expands.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 193 DOE Coordinator J.Aellen Contact: Nicholas Archer Sanders
 OERI # 6928 DOE Program Off: CE Glen Ridge Road VT 05055
 802-649-3869
 Category: Transportation Systems, Vehicles & Components
 Title: Engine Heating Device

Inventor: Nicholas Archer Sanders Patent Applied For
 State/Country: VT Grant # FG01-82CE15141
 Company:

Description: A truck diesel engine heater (Heat-exchanger/heat-sink) which stores heat from the exhaust for later use in warming a cold engine prior to startup. Crankcase oil or engine coolant is circulated through the heat exchanger and engine for warmup.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: May 7, 1980 Award Date: Sep 30, 1982
 Received by DOE from NBS: Oct 30, 1981
 Status: Award Award Amount: \$91,150 Contract Period:
 Development Stage: Concept Development Sep 30, 1982 - Sep 30, 1983
 Summary: A 12-month grant of \$91,150 was awarded to construct and test a prototype unit. Results of testing showed large energy savings, but equipment cost needs to be reduced. Marketing proceeding; Honeywell, State of Minnesota and US Army are among interested parties.

=====

DOE # 194 DOE Coordinator T.A.Coultas Contact: Oscar Leonard Doellner
 OERI # 5673 DOE Program Off: CE 130 North Jacobus Avenue Tucson AZ 85705
 602-623-7303
 Category: Transportation Systems, Vehicles & Components
 Title: Radiant Energy Power Source for Jet Aircraft

Inventor: Oscar Leonard Doellner Patent # 4 090 359
 State/Country: AZ Grant # FG01-82CE15144
 Company:

Description: Installation of photovoltaic cells in proximity to the liner of a jet engine combustion chamber to generate electrical power for replacing aircraft primary - and/or auxiliary-power units.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 30, 1979 Completion Date: Feb 14, 1983
 Received by DOE from NBS: Nov 12, 1981
 Status: Complete Award Amount: \$10,000 Contract Period:
 Development Stage: Concept Development Sep 20, 1982 - Dec 31, 1983
 Summary: A grant of \$10,000 was awarded. Ground tests on the J-85 engine will determine if sufficient radiant energy is available to power photovoltaic cells. Tests to be made at Williams AFB. Tests using silica fiber optics have been concluded, but results require considerable interpretation. The project has received national and international recognition. The inventor is in the process of preparing a test report. Project is otherwise completed.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 195 DOE Coordinator J.Aellen Contact: Howard L Barrett
 OERI # 7280 DOE Program Off: CE 506 Malden Avenue
 La Grange Park IL 60525
 312-354-3215

Category: Miscellaneous

Title: Proportional Current Battery

Inventor: Edward L Barrett (Deceased) Patent # 3 846 174
 State/Country: IL
 Company: Barrett-Keenan Company Grant # FG01-82CE15103

Description: A proportional current electric storage battery with tapered plate thickness
 that can maintain high current drain and charging rates with minimal material
 and weight.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 14, 1980 Award Date: Sep 15, 1982

Received by DOE from NBS: Nov 13, 1981

Status: Award Award Amount: \$87,757 Contract Period:

Development Stage: Concept Development Sep 15, 1982 - Jan 15, 1984

Summary: A grant of \$87,757 was awarded to build and test a working model of the tapered
 plate battery. The inventor has no plans yet for marketing.

=====

DOE # 196 DOE Coordinator J.Aellen Contact: John A Eastin
 OERI # 461 DOE Program Off: CE P. O. Box #389
 Grant NE 69140
 308-352-4454

Category: Industrial Processes

Title: Manufacturing and Using Nitrogen Fertilizer Solutions on a
 Farm

Inventor: John A Eastin Patent Applied For
 State/Country: NE
 Company: Grant # FG01-82CE15142

Description: The continuous manufacture, on a farm, of nitrogenous fertilizer by the
 reaction of nitrogen dioxide with water to produce nitric acid which is
 neutralized to ammonium nitrate or other nitrogenous compounds that can be
 applied to a field by way of an irrigation system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 5, 1975 Completion Date: Aug 31, 1982

Received by DOE from NBS: Dec 23, 1981

Status: Complete Award Amount: \$99,592 Contract Period:

Development Stage: Prototype Test Aug 31, 1982 - Aug 31, 1983

Summary: A 12-month grant of \$99,592 was awarded to construct and test a prototype integrated
 unit, and measure its efficiency. Grantee plans to manufacture and sell units if
 process is successful. Farm coops will produce fertilizer, thus diversifying the
 process and reducing costs of transportation and storage. This project has been
 completed.

=====

DOE # 197 DOE Coordinator D.G.Mello Contact: Robert F Karlicek
 OERI # 7086 DOE Program Off: CE 1920 Camino Centroloma
 Fullerton CA 92633
 714-871-8046

Category: Other Natural Sources

Title: Frequency Regulator and Protective Devices for Synchronous Generators

Inventor: Robert F Karlicek Patent Applied For
 State/Country: CA Grant # FGD1-82CE15132
 Company:

Description: A solid-state frequency controller and protective device for small scale synchronous generators used for isolated power generation such as hydroelectric generation.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 3, 1980 Completion Date: Sep 15, 1982

Received by DOE from NBS: Dec 28, 1981

Status: Complete Award Amount: \$65,990 Contract Period:

Development Stage: Prototype Test Sep 20, 1982 - Sep 20, 1983

Summary: A 12-month grant of \$65,990 was awarded to build, test and develop a solid state frequency controller and protective device for small scale synchronous generators of three sizes: 5,100 and 150kw. ERIP assistance is complete. No further report is available.

=====

DOE # 198 DOE Coordinator J.Aellen Contact: Robert H Nealy

OERI # 5281 DOE Program Off: CE

Category: Industrial Processes

Title: The Thermatreat System

Inventor: Robert H Nealy
 State/Country: PA
 Company:

Description: An on-site aerobic sewage treatment plant for home use which recovers heat for space and water heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 6, 1979 Decision Date: Dec 30, 1981

Received by DOE from NBS: Dec 30, 1981

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE, with some further need for negotiation indicated. Inventor seeks \$500,000 for R & D, and invention is in the concept stage. DOE action in abeyance in fy 84 pending inventor obtaining SEC approved prospectus.

=====

DOE # 199 DOE Coordinator J.S.Dhillon Contact: John Hunter
 34 Camus Avenue
 OERI # 7718 DOE Program Off: CE Edinburgh EH10 6QU
 Scotland
 Category: Buildings, Structures & Components 031-445-1272

Title: Rotary Coal Combustor and Heat Exchangers

Inventor: John Hunter Patent # 1 521 088 & Others
 State/Country: Scotland Grant # FG01-85CE15242
 Company:

Description: A rotary multi-fuel fluidized-bed-combustor and heat exchanger that can be used in parallel with steam turbines for power generation or to provide a pressurized clean gas for use with high temperature gas turbines.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 24, 1980 Award Date: Aug 16, 1985

Received by DOE from NBS: Jan 18, 1982

Status: Award Award Amount: \$63,847 Contract Period:

Development Stage: Engineering Design Aug 16, 1985 -

Summary: A grant of \$63,847 was awarded on August 16, 1985, to Lehigh University to perform engineering analysis on Mr. Hunter's combustor/Gasifier. Designs will be prepared and economic analysis will be performed. The proposed combustor/Gasifier will be compared with state-of-the-art units.

=====

DOE # 200 DOE Coordinator J.Aellen Contact: Shao-E Tung
 91 Blake Road
 OERI # 7385 DOE Program Off: CE Brookline MA 02146
 617-731-5490

Category: Industrial Processes

Title: Removal of Sulfur Dioxide from the Stack Gas of Combustors
 Burning High Sulfur Fuel

Inventor: Shao-E Tung Patent # 4 324 775 & Others
 State/Country: MA Grant # FG01-82CE15125
 Company:

Description: A process for removing sulfur dioxide from flue gasses and converting sulfur dioxide to elemental sulfur.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 8, 1980 Award Date: Aug 10, 1982

Received by DOE from NBS: Jan 27, 1982

Status: Award Award Amount: \$99,820 Contract Period:

Development Stage: Engineering Design Aug 10, 1982 - Feb 10, 1984

Summary: An 18 month R & D contract of \$99,820 was awarded to obtain laboratory data on equilibrium and rates, upon which the absorption/stripping portion of the invention is based. The possibility exists for follow-on investment by the Republic of China. Inventor seeks licensing opportunities.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 201 DOE Coordinator D.G.Mello Contact: Louis A Hausknecht
 4504 State Road
 OERI # 6680 DOE Program Off: CE Cleveland OH 44109
 216-749-1686
 Category: Transportation Systems, Vehicles & Components
 Title: Hydraulic, Variable, Engine Valve Actuation System

Inventor: Louis A Hausknecht Patent # 4 153 016 & Others
 State/Country: OH Grant # FG01-82CE15137
 Company:

Description: A modified hydraulic valve lifter which provides a means to vary valve timing and lift to improve fuel economy and reduce emissions. The device is actuated by engine oil pressure and is controlled by manifold vacuum in response to engine demand.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 31, 1980 Completion Date: Dec 31, 1984

Received by DOE from NBS: Feb 26, 1982

Status: Complete Award Amount: \$85,060 Contract Period:

Development Stage: Working Model Aug 27, 1982 - Aug 27, 1983

Summary: A 12-month grant of \$85,060 was awarded for the design, assembly and testing of a prototype hydraulic variable valve actuating system to be used in automobile engines.

=====

DOE # 202 DOE Coordinator J.S.Dhillon Contact: Yao Tzu Li
 Huckleberry Hill
 OERI # 5495 DOE Program Off: CE Lincoln MA 01773
 617-259-9592
 Category: Miscellaneous
 Title: Wobbling Type Distillation Apparatus

Inventor: Yao Tzu Li Patent Applied For
 State/Country: MA Grant # FG01-82CE15129
 Company:

Description: A multiple-effect vacuum distillation system employing sets of wobbling tubes to produce a thin liquid film thereby improving the evaporation efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 30, 1979 Completion Date: Sep 16, 1983

Received by DOE from NBS: Mar 31, 1982

Status: Complete Award Amount: \$99,880 Contract Period:

Development Stage: Working Model Sep 17, 1982 - Sep 16, 1983

Summary: A grant of \$99,880 was awarded to design, build and test a prototype distillation device capable of 25 gallons/minute throughout. The inventor is seeking licenses or capital to build and market his machine.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 203 DOE Coordinator J.S.Dhillon Contact: Morris R Jeppson
 OERI # 5898 DOE Program Off: CE Box #221489
 Carmel CA 93922
 408-624-3152

Category: Industrial Processes

Title: Microwave Methods and Apparatus for Paving and Paving Maintenance

Inventor: Morris R Jeppson Patent # 4 319 856 & Others
 State/Country: CA Grant # FG01-84CE15173
 Company: Microdry Corporation

Description: A method to repave asphalt roads in place using recycled material and microwave heating.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 2, 1979 Completion Date: Dec 21, 1984

Received by DOE from NBS: Apr 28, 1982

Status: Complete Award Amount: \$52,000 Contract Period:

Development Stage: Working Model Sep 22, 1982 - Dec 21, 1984

Summary: A grant for \$52,000 was awarded on December 12, 1984 to design a prototype machine. The inventor prepared a design for a full-scale automatic paving machine. He has a smaller prototype which appears to perform well. He is seeking capital or an industrial partner to build a full-scale prototype of his machine. He has received numerous inquiries about his machine from prospective users.

=====

DOE # 204 DOE Coordinator D.G.Mello Contact: Raymond P Holland Jr

OERI # 3872 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: The Induction Propeller

Inventor: Raymond P Holland Jr Patent # 3 226 031
 State/Country: NM
 Company: The Holland Corporation

Description: An induction propeller for ship propulsion designed to include forward hydrodynamic rake for increased mass flow and higher efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 11, 1978 Decision Date: Nov 10, 1982

Received by DOE from NBS: Apr 29, 1982

Status: No DOE Support

Development Stage: Prototype Development

Summary: Inventor has abandoned this project in favor of another more promising invention not being supported by ERIP.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 205 DOE Coordinator J.Aellen Contact: Charles B James
OERI # 7178 DOE Program Off: CE
Category: Industrial Processes
Title: Energy Efficient Solid State Multiple Operator Metallic Arc
Welding System
Inventor: Charles B James
State/Country: MO
Company: Big-4 Manufacturing Co Inc
Description: A system for distributing and controlling AC electric power for metal arc
welding to multiple welding stations.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 26, 1980 Decision Date: Jun 9, 1983
Received by DOE from NBS: May 21, 1982
Status: No DOE Support
Development Stage: Engineering Design
Summary: Declined DOE assistance.

=====

DOE # 206 DOE Coordinator D.G.Mello Contact: Jonathan Gabel
OERI # 7962 DOE Program Off: CE 5800 Ocean View Drive
Oakland CA 94618
415-653-8879
Category: Combustion Engines & Components
Title: Method and Apparatus for High Efficiency Operation of
Electromechanical Energy Conversion
Inventor: Jonathan Gabel Patent Applied For
State/Country: CA Grant # FG01-85CE15159
Company:
Description: An electrical controller for a separately-excited (shunt) DC motor which
optimizes the ratio of armature and field currents to achieve minimum
electrical I-squared-R losses for any load conditions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 7, 1981 Award Date: Apr 8, 1985
Received by DOE from NBS: May 26, 1982
Status: Award Award Amount: \$49,500 Contract Period:
Development Stage: Working Model Apr 8, 1985 -
Summary: A grant of \$49,500 was awarded on April 8, 1985 to build and test a prototype.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 207 DOE Coordinator J.Aellen Contact: Frank L Anderson

OERI # 8441 DOE Program Off: CE

Category: Industrial Processes

Title: Glass Sheet Manufacturing Method and Apparatus

Inventor: Frank L Anderson

Patent # 4 162 907

State/Country: WV

Company:

Description: A glass manufacturing process and apparatus having a vertical air-cooled electric furnace and transverse air-cooled refiner section. The furnace melts glass by passing an electric current through the composition and thus eliminates the emission of hot spent gasses that normally results from gas-fired furnaces.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 15, 1981 Decision Date: Jun 23, 1982

Received by DOE from NBS: Jun 23, 1982

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

=====

DOE # 208 DOE Coordinator D.G.Mello Contact: Norman C Fawley, President

OERI # 8406 DOE Program Off: CE

NCF Industries
2205 Cherry Industrial Circle
Long Beach CA 90805
213-630-8954

Category: Fossil Fuels

Title: CNG Automotive Fuel Cylinders/Gas Transport Modules

Inventor: Norman C Fawley

Patent Applied For

State/Country: CA

Company: NCF Industries

Grant # FG01-84CE15196

Description: A lightweight aluminum gas transport vessel for storing compressed natural gas to fuel light transportation vehicles.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 1, 1981 Award Date: Sep 11, 1984

Received by DOE from NBS: Jun 23, 1982

Status: Award Award Amount: \$50,000 Contract Period:

Development Stage: Prototype Test Sep 15, 1984 - Jul 15, 1985

Summary: An award of \$50,000 was made to pressure test the inventor's transport module.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 209 DOE Coordinator D.G.Mello Contact: John W Yount
P O Box #7
OERI # 7861 DOE Program Off: CE Bullock NC 27507
919-693-4839
Category: Buildings, Structures & Components
Title: Reclaiming Process for Resin Treated Fiberglass

Inventor: John W Yount Patent Applied For
State/Country: NC Grant # FG01-84CE15174
Company:

Description: A process for reclaiming fiberglass from waste material for use as insulation by separating it from the urea-formaldehyde resin coating with which it is impregnated during manufacture.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 3, 1980 Award Date: Apr 4, 1984
Received by DOE from NBS: Jun 28, 1982
Status: Award Award Amount: \$50,000 Contract Period:
Development Stage: Production Engineering Apr 3, 1984 -

Summary: A grant of \$50,000 was authorized on April 4th, 1984, for building and testing fiberglass reclaiming machine. Inventor has delayed signing grant document in favor of direct licensing negotiations with manufacturers.

=====

DOE # 210 DOE Coordinator G.K. Ellis Contact: Lloyd Flatland
Fifteen Quisisana Drive
OERI # 7631 DOE Program Off: CE/FE Kentfield CA 94904
415-456-6889
Category: Fossil Fuels
Title: Ultra High Speed Drilling Device for Use in Hard Rock Formations

Inventor: Lloyd Flatland
State/Country: CA Grant # FG01-84CE15185
Company:

Description: A diamond cutting disk which is rotated at high linear velocities by twin downhole turbines to drill hard rock formations for deep oil recovery.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 3, 1980 Award Date: Aug 28, 1984
Received by DOE from NBS: Jun 29, 1982
Status: Award Award Amount: \$46,000 Contract Period:
Development Stage: Prototype Test Aug 28, 1984 -

Summary: A phase I grant of \$46,000 was awarded On August 28, 1984, to build and test a prototype high-speed drill. Suitability to drill hard rock will be determined. Phase I has been successfully completed. Phase II grant package is in process.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 211 DOE Coordinator J.Aellen Contact: Robert F Evans
P O Box #45674
OERI # 7918 DOE Program Off: CE/FE Dallas TX 75235
214-351-6487
Category: Fossil Fuels
Title: Shock Mounted Stratapax Bit

Inventor: Robert F Evans Patent Applied For
State/Country: TX Grant # FG01-82CE15149
Company:

Description: An oil well drilling bit to support polycrystalline diamond cutters. It is designed with concentric spring tempered steel rings containing helical slots.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 18, 1980 Award Date: Sep 24, 1982
Received by DOE from NBS: Jun 29, 1982
Status: Award Award Amount: \$57,545 Contract Period:
Development Stage: Concept Definition Sep 24, 1982 - Feb 28, 1984
Summary: A grant of \$57,545 was awarded for the grantee to design, fabricate and test, four variations of the invention.

=====

DOE # 212 DOE Coordinator G.K.Ellis Contact: Hugh Huislander
OERI # 8517 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Water Warden

Inventor: Louis E Govear Patent # 4 202 525
State/Country: CA
Company: Chemworld Corporation

Description: A plastic disc about two inches in diameter that installs in a commercial type of toilet water control valve to reduce the flushing cycle.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 14, 1981 Completion Date:
Received by DOE from NBS: Jun 30, 1982
Status: Complete
Development Stage: Production & Marketing
Summary: Inventor requested assistance in marketing his invention in the Federal sector. A DOE letter of introduction and a listing of States' contacts has been provided.

=====

DOE # 213 DOE Coordinator G.K. Ellis Contact: Clyde F Kaunitz
 OERI # 8110 DOE Program Off: CE
 Category: Industrial Processes
 Title: The Kaunitz Process for Welding Pipe

Inventor: Clyde F Kaunitz
 State/Country: MI
 Company:

Description: A pipe joining process particularly for large transmission pipelines that involves expanding and machining each end and then aligning both sections axially and radially prior to welding.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 20, 1981 Decision Date: Oct 24, 1984

Received by DOE from NBS: Jun 30, 1982

Status: Analysis

Development Stage: Engineering Design

Summary: The inventor has not provided a work plan after repeated requests by DOE.

=====

DOE # 214 DOE Coordinator G.K.Ellis Contact: Donald E Wise
 OERI # 8723 DOE Program Off: CE 1875 Mohawk Blvd, #71
 Springfield OR 97477
 503-683-4002
 Category: Transportation Systems, Vehicles & Components
 Title: Convertible Flat/Drop Trailer

Inventor: Donald E Wise Patent # 4 290 642
 State/Country: OR
 Company: Grant # FG01-84CE15175

Description: A removable bed trailer, constructed in three sections, that enables a single unit to function as a flat-bed trailer, drop-center trailer or a detachable-neck light-duty trailer.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 2, 1981 Award Date: Sep 18, 1984

Received by DOE from NBS: Jul 29, 1982

Status: Award Award Amount: \$63,069 Contract Period:

Development Stage: Production Engineering Sep 18, 1984 -

Summary: A grant of \$63,069 was awarded on September 18, 1984 to build and test a prototype convertible trailer to determine fuel savings. The inventor has licensed his technology to Trail King Company in Nebraska. Waiting for final report on the project.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 215 DOE Coordinator G.K.Ellis Contact: Richard Jablin

OERI # 2333 DOE Program Off: CE/FE

Category: Industrial Processes

Title: Slag Waste Heat Boiler

Inventor: Richard Jablin

Patent Applied For

State/Country: NC

Company:

Description: A slag waste heat boiler which produces wet steam from steel plant heat during the steel making process. Molten slag, a by-product, is poured over water-filled, rotating cylinders. Steam is formed inside the cylinders and the solidified slag is scraped from the cylinders.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 7, 1977 Decision Date: Sep 17, 1985

Received by DOE from NBS: Jun 29, 1982

Status: Decision Phase

Development Stage: Concept Development

Summary: A preliminary work proposal has been received by DOE. It is under study.

=====

DOE # 216 DOE Coordinator D.G.Mello

Contact: Richard F Kiley

OERI # 8499 DOE Program Off: CE

Thermal Associates Inc
197 Main Street, P O Box #248
North Reading MA 01864
617-664-3342

Category: Combustion Engines & Components

Title: Method and Assembly for Mounting a Semiconductor Element

Inventor: Richard F Kiley

Patent Applied For

State/Country: MA

Company: Thermal Associates, Inc.

Grant # FG01-84SE15199

Description: A method of packaging semiconductor wafers to achieve double-sided cooling of the wafer without clamps, springs or studs; power semi-conductors, such as used in motor controllers, can thus operate at higher current levels.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jul 7, 1981 Award Date: Sep 14, 1984

Received by DOE from NBS: Jul 30, 1982

Status: Award Award Amount: \$53,900 Contract Period:

Development Stage: Limited Production/Marketing Sep 20, 1984 - Sep 20, 1985

Summary: A grant of \$53,900 was awarded to build and test prototype semiconductor elements.

=====

DOE # 217 DOE Coordinator J.Aellen Contact: Jeff Landua

OERI # 8074 DOE Program Off: CE

Category: Fossil Fuels

Title: Jointless Advanced Composite Material Tape for Operating
Lift Pumps in Oil Wells

Inventor: Curtis J Tanner

State/Country: CA

Company: Henlin Company

Description: A jointless composite material tape (ribbon rod) made from carbon fibers,
epoxy and fiber tape for use in place of steel sucker rods normally used in
conjunction with beam pumping of oil wells.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 12, 1981 Decision Date:

Received by DOE from NBS: Jul 30, 1982

Status: No DOE Support

Development Stage: Prototype Test

Summary: Invention sold. Purchaser declines DOE assistance.

=====

DOE # 218 DOE Coordinator G.K.Ellis Contact: Wilford Dean Tannehill

OERI # 8950 DOE Program Off: FE

Category: Industrial Processes

Title: Behemoth

Inventor: Wilford Dean Tannehill

Patent Applied For

State/Country: TX

Company: T.S.F. Oil Equipment Inc

Description: An apparatus and process for reclaiming waste oil at drilling sites by
separating water and solids. Solids and water can be returned to the site and
land restored to its natural state.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 17, 1982 Decision Date: Sep 17, 1985

Received by DOE from NBS: Jul 30, 1982

Status: Other Assistance

Development Stage: Production & Marketing

Summary: The inventor is looking for a licensee or buyer of his invention.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 219 DOE Coordinator J.Aellen Contact: Thomas M Meshbesher
 4507 Weldin Road
 OERI # 8054 DOE Program Off: CE Wilmington DE 19899
 302-658-9141
 Category: Combustion Engines & Components
 Title: Method for Making Acetaldehyde from Ethanol

Inventor: Thomas M Meshbesher Patent Applied For
 State/Country: DE Grant # FG01-84CE15191
 Company:

Description: A process to convert low proof ethanol directly to anhydrous acetaldehyde by an electrogenerative conversion process using fuel cell technology. During the conversion heat and electricity are produced.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Feb 5, 1981 Award Date: Sep 18, 1984
 Received by DOE from NBS: Jul 30, 1982
 Status: Award Award Amount: \$49,983
 Development Stage: Laboratory Test
 Summary: A grant of \$49,983 was awarded to perform an economic study.

=====

DOE # 220 DOE Coordinator D.G.Mello Contact: Charles A Schwartz
 24545 Bryden Road
 OERI # 7767 DOE Program Off: CE Beachwood OH 44122
 216-831-3099
 Category: Industrial Processes
 Title: Deep Throat Resistance Welder

Inventor: Charles A Schwartz Patent Applied For
 State/Country: OH Grant # FG01-CE8415192
 Company:

Description: A high-frequency spot-welding system which permits relatively small and flexible power cabling between the gun and the power source as compared with the heavy cabling required of either 60-hertz or DC systems. This allows a greater proportion of the power-line energy being transferred to the weld rather than dissipated in the system conductors.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 4, 1980 Award Date: Sep 14, 1984
 Received by DOE from NBS: Aug 30, 1982
 Status: Award Award Amount: \$45,920 Contract Period:
 Development Stage: Prototype Test Sep 19, 1984 - Sep 18, 1985
 Summary: A grant of \$45,920 was awarded on September 14, 1984 to build and test a prototype.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 221 DOE Coordinator J.Aellen Contact: John Griffin
OERI # 8964 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Strainercycle

Inventor: Rudolf O Iverson Patent # 3 995 443
State/Country: NY
Company: Thermocycle International, Inc

Description: A means for providing cooling in a building, when the outside temperature drops below 65 degrees Fahrenheit, by injecting strained cooling tower water into chilled water circuits in order to eliminate the use of mechanical refrigeration during this time.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 25, 1982 Decision Date: Sep 23, 1982

Received by DOE from NBS: Sep 13, 1982

Status: Other Assistance

Development Stage: Production & Marketing

Summary: ERIP identified government market for inventor.

=====

DOE # 222 DOE Coordinator D.G.Mello Contact: Donald R Thomas
OERI # 7979 DOE Program Off: CE
Category: Direct Solar
Title: Louver Trombe Solar Storage Unit

Inventor: Donald R Thomas
State/Country: VT
Company: Solar Works

Description: A jalousie shutter, Trombe-type, phase exchange storage unit. Each shutter is prism shaped and exposes, alternately, a transmission, absorption or combination - side toward the sun.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 15, 1981 Decision Date:

Received by DOE from NBS: Oct 7, 1982

Status: Other Assistance

Development Stage: Laboratory Test

Summary: ERIP assistance is completed. Referred to National Appropriate Technology Assistance Service (NATAS) for assistance.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 223 DOE Coordinator J.Aellen Contact: Ruel Carlton Terry
OERI # 8456 DOE Program Off: CE 3090 South High Street
Denver CO 80210
303-759-3826

Category: Fossil Fuels

Title: Minimizing Subsidence Effects during Production of Coal In Situ

Inventor: Ruel Carlton Terry Patent Applied For
State/Country: CO
Company: Grant # FG01-84CE15169

Description: The invention is a process for using a foaming mud cement to prevent or minimize subsidence in underground gasification sites.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 17, 1981 Award Date: Apr 4, 1984

Received by DOE from NBS: Oct 14, 1982

Status: Award Award Amount: \$53,964 Contract Period:

Development Stage: Concept Development Apr 4, 1984 -

Summary: A grant of \$53,964 has been awarded to perform lab work. Follow-up funding by other sources expected depending upon results.

=====

DOE # 224 DOE Coordinator J.Aellen Contact: Guyer Grimminger, Presiden
COMET, Inc
OERI # 6782 DOE Program Off: CE 3221 Ramada Road
Grand Island NE 68801
308-381-2990

Category: Industrial Processes

Title: Haile Alternate Fuel Grain Dryer

Inventor: Jack D Haile (Deceased) Patent Applied For
State/Country: NE
Company: COMET, Inc Grant # FG01-84CE15190

Description: This is a design for a grain dryer which is capable of using grain dust collected from grain elevators as an alternate fuel.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 9, 1980 Award Date: Sep 14, 1984

Received by DOE from NBS: Oct 14, 1982

Status: Award Award Amount: \$50,000

Development Stage: Engineering Design

Summary: A grant of \$50,000 was awarded for design and engineering analysis of the grain dryer using grain dust as fuel.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 225 DOE Coordinator J.Aelien Contact: Thomas C Edwards

OERI # 8593 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: ROVAC High Efficiency Low Pressure Air Conditioning System

Inventor: Thomas C Edwards

Patent Applied For

State/Country: FL

Company: The ROVAC Corporation

Description: An air conditioning unit which utilizes rotary vane compressor with multiple vanes and low pressure refrigerant such as R-114. The vanes in the compressor are mechanically restrained so that they do not touch the casing.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 24, 1981 Decision Date:

Received by DOE from NBS: Oct 28, 1982

Status: Analysis

Development Stage: Prototype Test

Summary: So far no satisfactory proposal has been received by DOE.

=====

DOE # 226 DOE Coordinator D.G.Mello Contact: Stewart Ryan

OERI # 8826 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: An Electronic Anemometer System for Locating
Air-Infiltration Heat Leaks in Buildings

Inventor: Stewart Ryan

State/Country: OK

Company:

Description: An electronic anemometer system for detection and location of air infiltration in residential and commercial structures. A fan creates a negative pressure inside the structure and an electronic leak detector detects air motion at cracks in the building.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Dec 28, 1981 Decision Date:

Received by DOE from NBS: Nov 29, 1982

Status: Analysis

Development Stage: Prototype Development

Summary: Action temporarily suspended at inventors request. Inventor sold six month option.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 227 DOE Coordinator D.G.Mello Contact: Norman C Fawley
OERI # 9055 DOE Program Off: CE NCF Industries
Category: Miscellaneous 2205 Cherry Industrial Circle
Long Beach CA 90805
312-630-1151
Title: CRM Pipe

Inventor: Norman C Fawley
State/Country: CA
Company: NCF Industries Grant # FG01-84CE15197

Description: A process for manufacturing pipe for high pressure gas transmission lines.
Metal pipe is wound with resin impregnated composite-fibre reinforcement.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Mar 1, 1982 Award Date: Aug 8, 1984
Received by DOE from NBS: Dec 14, 1982
Status: Award Award Amount: \$50,000 Contract Period:
Development Stage: Concept Development Jul 15, 1984 - Jul 15, 1985
Summary: A grant of \$50,000 was awarded to test inventor's device to arrest crack propagation
in gas pipelines.

=====

DOE # 228 DOE Coordinator J.Aellen Contact: Meredith C Gourdine
OERI # 8466 DOE Program Off: CE
Category: Transportation Systems, Vehicles & Components
Title: EGD Fog Dispersal System
Inventor: Meredith C Gourdine
State/Country: NJ
Company: Energy Innovations Inc Grant # FG01-84CE15184

Description: An electrogasdynamic device for dispersing fog that propels a stream of
negatively charged water droplets into the air causing fog droplets to become
charged and electrically attracted to the ground.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jun 19, 1981 Decision Date: Jun 3, 1985
Received by DOE from NBS: Dec 15, 1982
Status: Procurement
Development Stage: Prototype Development
Summary: Cost sharing proposal accepted. A \$80,709 grant package is in procurement.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 229 DOE Coordinator D.G.Mello Contact: Edward M Tourtelot (Deceased)
OERI # 8982 DOE Program Off: CE
Category: Combustion Engines & Components
Title: Contoured Finger Follower Variable Valve-Timing Mechanism
for Internal Combustion Engines
Inventor: Edward M Tourtelot (Deceased) Patent Applied For
State/Country: IL
Company:
Description: An inexpensive mechanism for varying the valve-timing of internal combustion
engines in response to variations in engine operating conditions.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 14, 1982 Decision Date: Nov 19, 1984
Received by DOE from NBS: Jan 20, 1983
Status: Analysis
Development Stage: Concept Development
Summary: Deceased inventor's son will carry project forward. A proposal is being prepared for
DOE consideration.

=====

DOE # 230 DOE Coordinator J.S.Dhillon Contact: Donald C Erickson
OERI # 7530 DOE Program Off: CE 627 Ridgely Avenue MD 21401
301-266-6521
Category: Buildings, Structures & Components
Title: Absorption Heat Pump Augmented Separation Process
Inventor: Donald C Erickson
State/Country: MD
Company: Energy Concepts Co Grant # FG01-84CE15172
Description: A reverse absorption heat pump which transfers heat from the condenser of a
distillation column to the reboiler using a lithium-bromide-water system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 24, 1980 Award Date: Apr 9, 1984
Received by DOE from NBS: Jan 24, 1983
Status: Award Award Amount: \$25,000 Contract Period:
Development Stage: Concept Development Apr 9, 1984 -
Summary: A first phase grant of \$25,000 was awarded on April 9, 1984 to find a suitable
application and perform initial design. The inventor is still looking for an
industrial partner to install and test a full-scale absorption heat pump.

Inventions Recommended for DOE Consideration by NBS' OER1 - A Brief Status Report

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DOE #	231	DOE Coordinator	G.K.Ellis	Contact:	Guy R B Elliott
OER1 #	9008	DOE Program Off:	CE		Los Alamos Cons Alpha Inc
Category:	Fossil Fuels				133 La Senda Road
					Los Alamos NM 87544
					505-672-3603
Title:	Natural Gas from Deep-Brine Solutions				

Inventor:	Guy R B Elliott	Patent #	4 262 747
State/Country:	NM		
Company:	Los Alamos Consultants Alpha Inc	Grant #	FG01-84CE15171

Description: A process for recovering geopressure methane gas by use of a deep-submerged separator of special design which separates the methane at depth and continuously recirculates the spent brine back into the formation of origin.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	May 5, 1982	Award Date:	Apr 2, 1984
Received by DOE from NBS:	Jan 24, 1983		
Status:	Award	Award Amount:	\$75,000
		Contract Period:	
Development Stage:	Prototype Development		Apr 2, 1984 -

Summary: An grant of \$75,000 was awarded to build and test a prototype on the lab scale. Carbon dioxide dissolved in water will be used to operate the pump.

=====

DOE #	232	DOE Coordinator	J.Aellen	Contact:	Kenneth R Kurple
OER1 #	7662	DOE Program Off:	CE		9533 Springborn Road
Category:	Industrial Processes				Anchorville MI 48004
					313-727-7631
Title:	Method of Separating Lignin and Making Epoxide-Lignin				

Inventor:	Kenneth R Kurple	Patent #	4 111 928
State/Country:	MI		
Company:		Grant #	FG01-84CE15193

Description: A process for low cost separation of lignin from the black cooking liquor which is a waste product from the kraft and sulfite paper pulping process, and for producing lignin-epoxide resins.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS:	Oct 14, 1980	Award Date:	Jul 19, 1984
Received by DOE from NBS:	Jan 26, 1983		
Status:	Award	Award Amount:	\$61,739
		Contract Period:	
Development Stage:	Limited Production/Marketing		Jul 19, 1984 -

Summary: A \$61,739 first phase grant was awarded to perform lab analysis. A second phase grant is anticipated depending on availability of funds.

DOE # 233 DOE Coordinator J.Aellen Contact: Daniel A Lockie

OERI # 8984 DOE Program Off: CE

Category: Industrial Processes

Title: Mounted Steerable Ripper for Deep Soil Ripping and Subsoil Operations

Inventor: Daniel A Lockie

State/Country: CA

Company:

Description: An hydraulically-actuated, rear-mounted, steerable ripper for crawler tractors intended for agricultural deep tillage operations. The steering action of the ripper assists or effects tractor steering, permitting more effective utilization of power transmitted to the tractor tracks.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Apr 15, 1982 Decision Date:

Received by DOE from NBS: Feb 1, 1983

Status: No DOE Support

Development Stage: Concept Development

Summary: Comparable technology is already on the market.

DOE # 234 DOE Coordinator G.K.Ellis

Contact: Douglas E Wood

OERI # 2968 DOE Program Off: CE

Box #32
Fox Island WA 98333
206-549-2190

Category: Direct Solar

Title: Geodesic Solar Paraboloid

Inventor: Douglas E Wood

Patent # 4 171 876

State/Country: WA

Company: Solar Steam Inc

Grant # FG01-85CE15203

Description: A parabolical point-focusing solar concentrator consisting of a dish reflecting surface, a track and a geodesic reflector support system.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Nov 18, 1977 Award Date: Apr 17, 1985

Received by DOE from NBS: Feb 24, 1983

Status: Award Award Amount: \$50,000 Contract Period:

Development Stage: Prototype Test Apr 17, 1985 -

Summary: A grant of \$50,000 was awarded on April 17, 1985 to make design improvements to the existing prototype. It is currently being tested for improvement of efficiency.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE #	235	DOE Coordinator	J.S.Ohillon	Contact:	Harry Curtin
OERI #	8644	DOE Program Off:	CE		Penn State Engineering Inc
Category:	Fossil Fuels				522 East College Avenue
					P O Box #177
					State College PA 16801
					814-238-5013

Title: Single Stage Anaerobic Digestion Process

Inventor:	Jay E Ort	Patent Applied For
State/Country:	PA	
Company:	Penn State Engineering, Inc	Grant # FG01-84CE15170

Description: A process for accelerating the manufacture of relatively high-purity methane fuel gas through a process of anaerobic digestion, involving retention of organic material in an aqueous slurry which is maintained at a predetermined V/I ratio, temperature, and minimizes the production of carbon dioxide.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Sep 18, 1981 Award Date: Apr 2, 1984

Received by DOE from NBS: Mar 30, 1983

Status: Award Award Amount: \$50,000 Contract Period:

Development Stage: Concept Development Apr 2, 1984 -

Summary: A phase one grant of \$50,000 was awarded on April 2, 1984 to study and optimize the basic parameters of the process. The first run of tests were not successful due to defective equipment. Another series of tests are currently in process and results should be available in late 1985.

=====

DOE #	236	DOE Coordinator	D.G.Mello	Contact:	Ronald E Brandon
OERI #	9167	DOE Program Off:	CE		1734 Lenox Road
Category:	Combustion Engines & Components				Schenectady NY 12308
					518-374-3241

Title: Steam Turbine Packing Ring

Inventor:	Ronald E Brandon	Patent Applied For
State/Country:	NY	
Company:		Grant # FG01-84CE15189

Description: A self-adjusting steam turbine packing ring that provides large shaft clearance during turbine start-up and reduced shaft clearance at normal turbine operating speeds. This action avoids packing ring damage during start-up and results in higher operating efficiency.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Oct 25, 1982 Award Date: Aug 8, 1984

Received by DOE from NBS: Apr 7, 1983

Status: Award Award Amount: \$51,900 Contract Period:

Development Stage: Concept Development Aug 8, 1984 - Jul 2, 1986

Summary: A grant of \$51,900 was made to build and test prototype turbine packing rings.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 237 DOE Coordinator D.G.Mello Contact: David E Hicks
5244 Cracker Barrel Circle
OERI # 9232 DOE Program Off: CE Colorado Springs CO 80917
303-596-4390

Category: Transportation Systems, Vehicles & Components

Title: Hicks Alter-Brake System/Electric Charging Apparatus for
Ground Vehicles

Inventor: David E Hicks
State/Country: CO
Company:

Grant # FG01-84CE15183

Description: An automotive electrical generating and battery charging system that is driven
primarily by vehicle momentum during braking, thus reducing required engine
power output.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Jan 19, 1982 Award Date: Sep 20, 1984

Received by DOE from NBS: May 12, 1983

Status: Award Award Amount: \$56,438 Contract Period:

Development Stage: Prototype Test Sep 20, 1984 - Sep 20, 1985

Summary: A grant of \$56,438 was awarded to build and test prototype battery charging system
using automobile momentum only.

=====

DOE # 238 DOE Coordinator G.K.Ellis Contact: Harry E Wood
6465 Oakland Drive
OERI # 9120 DOE Program Off: CE New Orleans LA 70118
504-488-7853

Category: Miscellaneous

Title: Industrial and Residential Clothes Dryer Automatic Shut-Off
at Dryness

Inventor: Harry E Wood
State/Country: LA
Company:

Grant # FG01-84CE15168

Description: A sensing system to shut off clothes dryer when the clothes have been dried
completely. The proposed system measures the time interval between consecutive
peaks as the dryer is cycled on and off between high and low temperature
limits and shuts the dryer off when the time intervals become constant.

Significant Dates, Status and Summary of Developments:

Form 1019 Rec'd by NBS: Aug 31, 1982 Award Date: Sep 17, 1985

Received by DOE from NBS: May 12, 1983

Status: Award Award Amount: \$57,000 Contract Period:

Development Stage: Laboratory Test Mar 7, 1984 - Sep 17, 1985

Summary: A grant of \$57,000 was awarded on September 17, 1985 for building and testing a
prototype. The project was successfully concluded. The inventor licensed his
technology.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 239 DOE Coordinator J.Aellen Contact: Jack Winnick
OERI # 8674 DOE Program Off: CE 3028 Vinings Way
Atlanta GA 30339
404-894-2839
Category: Industrial Processes
Title: Electrochemical Separation and Concentration of
Sulfur-Containing Gases from Gas Mixtures
Inventor: Jack Winnick Patent # 4 246 081
State/Country: GA Grant # FGD1-84CE15178
Company:
Description: An electrochemical process for removing sulfur oxides from flue gas discharges
from power plants which burn sulfur-containing fuels, principally high sulfur
coals.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Award Date: Jun 7, 1984

Received by DOE from NBS: May 18, 1983

Status: Award Award Amount: \$50,000

Development Stage: Working Model

Summary: A grant of \$50,000 was provided through Pittsburg Engineering Technical Center to
build prototype. ERIP transferred \$50,000 to PETC. Work will be performed at Georgia
Tech Research Institute. (GTRI)

=====

DOE # 240 DOE Coordinator G.K.Ellis Contact: Uwe H Butenhoff
OERI # 8823 DOE Program Off: CE
Category: Miscellaneous
Title: All Steam Heated Sadiron for Commercial Use

Inventor: Jay R Royston Patent Applied For
State/Country: CA
Company: I.R.D.A.

Description: A commercial use sadiron which is operated solely by superheated high pressure
steam generated from an external boiler to supply both the heat to the iron
sole plate and steam for moisture spray application as needed during the
ironing practice.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 76 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Jul 19, 1983

Status: No DOE Support

Development Stage: Engineering Design

Summary: Initial request for grant was rejected due to probable insufficient energy-saving
potential. A study conducted by NATAS indicated insufficient market for this
product. Two other companies are producing somewhat related product. Doe support not
warranted.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 241 DOE Coordinator J.Aellen Contact: Richard J Gay
9215 Clarewood - #358
OERI # 8601 DOE Program Off: CE Houston TX 77036
713-988-9136
Category: Fossil Fuels
Title: Polysulfide Oil Field Corrosion Control System

Inventor: Richard J Gay
State/Country: TX
Company: Grant # FG01-85CE15200

Description: A polysulfide additive to inhibit the corrosion of ferrous based metals in oil field and geothermal applications.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 70 Weeks Award Date: Dec 7, 1984
Received by DOE from NBS: Jul 28, 1983
Status: Award Award Amount: \$73,900 Contract Period:
Development Stage: Prototype Development Dec 7, 1984 -

Summary: A grant of \$73,900 was awarded on December 7th, 1984 to perform lab test, analysis and field test.

=====

DOE # 242 DOE Coordinator J.S.Dhillon Contact: Donald Shuler
General Delivery
OERI # 9310 DOE Program Off: CE Petersburg AK 99833
907-772-3038
Category: Industrial Processes
Title: New Petersburg Beam Trawl

Inventor: Donald Shuler
State/Country: AK
Company: Grant # FG01-84CE15180

Description: An improved trawl design to reduce drag for either single rigged or double rigged vessels.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Sep 5, 1984
Received by DOE from NBS: Sep 29, 1983
Status: Award Award Amount: \$63,000
Development Stage: Prototype Development

Summary: A grant of \$63,000 was awarded on September 5, 1985 to build and test a prototype beam-trawl fishing net to determine fuel efficiency per pound of catch. The inventor failed to submit quarterly technical reports. The beam trawl nets were built but never tested in the presence of an independent observer from the Sea Grant Program. The tests are planned for late 1985 in the Gulf Coast.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 243 DOE Coordinator P.M.Hayes Contact: Garry R Kenny
Magnetic Separation Syst Inc
OERI # 8031 DOE Program Off: CE 105 28th Avenue, South
Nashville TN 37212
Category: Industrial Processes 615-329-0695

Title: An Electronic/Pneumatic Ejector System for Producing an
Aluminum Rich Concentrate from Municipal Waste

Inventor: Edward J Sommer, Junior
State/Country: TN
Company: Magnetic Separation Systems Inc Grant # FGD1-84CE15179

Description: Method and apparatus for processing municipal waste to overcome the
disadvantages of the mass burning and the refuse derived-fuel methods by
combining the two processes and recovering aluminum and steel.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 91 Weeks Completion Date: Sep 13, 1985

Received by DOE from NBS: Sep 29, 1983

Status: Complete Award Amount: \$50,640 Contract Period:

Development Stage: Working Model Sep 15, 1984 - Sep 13, 1985

Summary: A grant of \$50,000 was awarded on September 13th 1985 to design, build and test a
prototype of the waste recovery system. The tests were successful. There have been
numerous licensing inquiries from large companies in the U.S. as well as overseas.
The inventor has licensed his process to National Recovery Technology in Nashville,
TN. They will market the system.

=====

DOE # 244 DOE Coordinator J.Aellen Contact: Brad L Pfeifley
CAMACAN, Inc.
OERI # 9459 DOE Program Off: CE 1623 South Syracuse
Denver CO 80231
Category: Transportation Systems, Vehicles & Components 303-426-0695

Title: CHARLIE - Trademark - Federally Registered #1123957

Inventor: Charles E Robinson Patent # 4 305 353 & Others
State/Country: CO
Company: CAMACAN, Inc. Grant # FGD1-84CE15174

Description: An electronic system for controlling engine-compression type brakes used on
trucks.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Award Date: Sep 13, 1984

Received by DOE from NBS: Sep 29, 1983

Status: Award Award Amount: \$51,655

Development Stage: Limited Production/Marketing

Summary: A grant of \$51,655 was awarded to build and test a prototype.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 245 DOE Coordinator J.Aellen Contact: Daniel M Busby
OERI # 9241 DOE Program Off: CE Itrad Innovation Center
Category: Fossil Fuels P O Box #1335
Durant OK 74701
405-566-2535

Title: Improved Oil Well Pumping Unit

Inventor: Thomas Neil Parker, Junior
State/Country: OK
Company: Itrad Innovation Center Grant # FG01-84CE15177

Description: A vector force balanced oil well pumping assembly.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Apr 8, 1985

Received by DOE from NBS: Sep 29, 1983

Status: Award Award Amount: \$61,801 Contract Period:

Development Stage: Working Model Jun 25, 1984 -

Summary: A grant of \$59,121 was awarded on June 25th, 1984 to build and test a prototype. Work to be conducted in cooperation with Rural Enterprises Inc. Potential exists for cost sharing in development and marketing. A supplemental grant of \$2,680 was awarded on April 8th, 1985.

=====

DOE # 246 DOE Coordinator D.G.Mello Contact: Juan M Garcia, Junior

OERI # 8733 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Maximum Cruise Performance

Inventor: Juan M Garcia, Junior
State/Country: CA
Company:

Description: Maximum cruise performance of jet powered aircraft is achieved by maintaining the ratio of "fuel flow to ground speed" to a minimum by using a closed loop feedback system and a software algorithm package connected into the aircraft's avionic mission computer network.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 96 Weeks Decision Date:

Received by DOE from NBS: Oct 31, 1983

Status: Analysis

Development Stage: Engineering Design

Summary: Preliminary proposal received from inventor. Coordinator seeking private sector assistance.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE #	247	DOE Coordinator	D.G.Mello	Contact:	Nathan Cohn	
OERI #	9342	DOE Program Off:	CE		8033 Via de Viva	
					Scottsdale	AZ 85258
					602-991-7063	

Category: Miscellaneous

Title: Energy Conservation by Improved Control of Bulk Power Transfers on Interconnected Systems

Inventor:	Nathan Cohn	Patent #	4 267 571
State/Country:	PA		
Company:	Network Systems Development Assoc	Grant #	FGD1-84CE15187

Description: In an interconnected electric power system, the parameters system time deviation and area inadvertent interchange can be decomposed into components respectively caused by regulating deficiencies in each of the individual control areas. These components can serve as the basis for an equitable payment technique for unscheduled transfers to replace the present practice of "repayment in kind".

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	43 Weeks	Award Date:	Sep 5, 1984
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Received by DOE from NBS: Nov 18, 1983

Status:	Award	Award Amount:	\$60,000	Contract Period:	
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Development Stage:	Prototype Development	Sep 5, 1984 - Feb 15, 1986
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Summary: A grant of \$60,000 was awarded to study the uneconomical inadvertent interchange of electric power between a number of cooperating electric utility companies, and to recommend a method to correct the resulting energy losses.

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DOE #	248	DOE Coordinator	y.Aellen	Contact:	Thorvald G Granryd	
OERI #	8617	DOE Program Off:	CE		12-60 North Western	
					109 Lake Forest	IL 60045
					312-234-8250	

Category: Industrial Processes

Title: Dyna-Bite Traction Intensifier, Model Agri, for Agricultural Tractors or the Like

Inventor:	Thorvald G Granryd	Patent #	4 225 D82 & Others
State/Country:	IL		
Company:	T. G. Strips, Inc.	Grant #	FGD1-84CE15186

Description: A device consisting of individual tire segments that are strapped to the driving wheels of a tractor or similar vehicle to improve traction and minimize the need for adding weight to get better traction.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	57 Weeks	Award Date:	Sep 18, 1984
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Received by DOE from NBS: Nov 22, 1983

Status:	Award	Award Amount:	\$34,664	Contract Period:	
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Development Stage:	Production Engineering	Sep 18, 1984 -
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Summary: A grant of \$32,064 was awarded on September 18, 1985 to build and test prototype traction intensifiers. Tests performed for traction were successful, but the device had minor durability problems. The inventor is seeking additional funds from DOE and the State of Illinois to improve the linkage design.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 249 DOE Coordinator D.G.Mello Contact: Patrick S Swihart, Senior
3507 Baumann
OERI # 9220 DOE Program Off: CE Midland TX 79703
915-694-1516
Category: Fossil Fuels
Title: Subsurface Flow Control (Gas Wells) and High GOR Oil Wells
Inventor: Patrick S Swihart, Senior Patent # 4 036 297 & Others
State/Country: TX Grant # FG01-85CE15202
Company:
Description: Subsurface gas well flow control and purge valve.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Aug 19, 1985
Received by DOE from NBS: Dec 30, 1983
Status: Award Award Amount: \$16,074 Contract Period:
Development Stage: Prototype Test Aug 19, 1985 -
Summary: An award was granted for \$16,074 on August 19, 1985 to build and test a prototype.

=====

DOE # 250 DOE Coordinator D.G.Mello Contact: Hugh Edwin Whitted III
OERI # 9458 DOE Program Off: CE
Category: Combustion Engines & Components
Title: A System to Adapt Diesel Engines to the Use of Crude Oils
Inventor: Hugh Edwin Whitted III
State/Country: NC
Company:
Description: A three-part system for converting conventional diesel engines so they can be
operated on either No. 2 diesel fuel or heavy fuels such as crude oil or
vegetable oils.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date:
Received by DOE from NBS: Dec 30, 1983
Status: Analysis
Development Stage: Prototype Test
Summary: Currently, inventor is receiving NATAS help. DOE awaiting news of NATAS action.
Inventor also negotiating with major air-compressor manufacturers for cooperative
demonstration programs.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 251 DOE Coordinator G.K.Ellis Contact: Victor R Thayer (Deceased)

OERI # 9260 DOE Program Off: CE

Category: Industrial Processes

Title: Process and Apparatus for Reducing the Energy Required to
Separate Liquids by Distillation

Inventor: Victor R Thayer (Deceased)

Patent # 4 265 736

State/Country: DE

Company:

Description: A method for heat recovery in distillation by providing heat exchange tubing
directly on the trays of the tower. This method is used primarily in crude oil
still.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Jan 31, 1984

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE. A phased grant may be a possibility.
Seeking University of Houston to do Computer simulation.

=====

DOE # 252 DOE Coordinator D.G.Mello

Contact: William C Whitman
Three Fourth Street
New Brunswick NJ 08901
201-545-3849

OERI # 9217 DOE Program Off: CE

Category: Miscellaneous

Title: Thermal Bank

Inventor: William C Whitman

Patent # 4 287 942

State/Country: NJ

Company:

Grant # FG01-85CE15211

Description: The "Thermal Bank" is a latent heat type thermal energy storage system.
Calcium chloride hexahydrate, the phase change salt, or any suitable phase
change material, is used as the working medium. Selected plastic film is
employed to form, fill and seal the tube sheets for the "Thermal Bank"
packaging.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Award Date: Mar 19, 1985

Received by DOE from NBS: Jan 31, 1984

Status: Award Award Amount: \$70,778 Contract Period:

Development Stage: Production Engineering Mar 19, 1985 -

Summary: A grant of \$70,778 was awarded on March 19, 1985 to Rutgers University to test
efficiency of various packaging materials and eutectic salts.

Inventions Recommended for DOE Consideration by NBS/ OERI - A Brief Status Report

=====

DOE # 253 DOE Coordinator J.S.Dhillon Contact: Anthony Peters
 300 Winston Drive
 OERI # 8635 DOE Program Off: CE Cliffs Park NJ 07010
 201-886-1320

Category: Buildings, Structures & Components

Title: High Performance Heat Pump

Inventor: Anthony Peters
 State/Country: NJ
 Company:

Grant # FG01-85CE15198

Description: A modified Brayton refrigeration cycle using injected liquid to achieve better performance.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 100 Weeks Award Date: Jul 22, 1985

Received by DOE from NBS: Feb 24, 1984

Status: Award Award Amount: \$63,200 Contract Period:

Development Stage: Engineering Design Sep 27, 1984 -

Summary: An award of \$63,200 was granted to perform a thermodynamic analysis, study component design and perform an economic analysis. Received the final report for the work done in phase I. The inventor worked on a different version of heat pump rather than the one that was recommended by N.B.S. without prior approval of DOE. Work termination on this project is being considered. About \$25,000 of the total grant has been spent so far.

=====

DOE # 254 DOE Coordinator D.G.Mello Contact: Girn Metal Products, Inc
 164 Glen Cove Road
 OERI # 9327 DOE Program Off: CE Carle Place NY 11514
 516-741-3005

Category: Industrial Processes

Title: "Turbo-Glo" Immersion Furnace

Inventor: Daniel Douenias
 State/Country: NY
 Company: Girn Metal Products, Inc

Grant # FG01-85CE15201

Description: A gas-fired melting furnace designed for melting aluminum. The design uses a new type combustion chamber and heat transfer device.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Award Date: Jan 29, 1985

Received by DOE from NBS: Mar 23, 1984

Status: Award Award Amount: \$74,700 Contract Period:

Development Stage: Prototype Development Jan 29, 1985 -

Summary: A grant of \$74,700 was awarded on January 29, 1985 to build and test a prototype under actual foundry conditions.

=====

DOE # 255 DOE Coordinator G.K.Ellis Contact: Arthur F Stone

OERI # 9806 DOE Program Off: CE

Category: Industrial Processes

Title: Method and Apparatus for Scrubbing Gas - Scrubbing Apparatus

Inventor: Arthur F Stone

Patent # 4 289 506 & Others

State/Country: NJ

Company:

Grant # FGD1-85CE15237

Description: A patented stack gas scrubber which contains a rotatable impeller to duplicate high energy venturi scrubber performance and which is claimed, as a result of test, to use 50% the power consumption.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Mar 27, 1984

Status: Decision Phase

Development Stage: Prototype Test

Summary: A proposal was received from the inventor. It is under study by DOE.

=====

DOE # 256 DOE Coordinator J.Aellen Contact: Evert S Green

OERI # 9696 DOE Program Off: CE

Category: Miscellaneous

Title: Method and Apparatus for Irrigating Container Grown Plants

Inventor: Evert S Green

Patent # 4 245 434 & Others

State/Country: NY

Company:

Description: A Method and apparatus for irrigating container grown plants.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 28 Weeks Decision Date:

Received by DOE from NBS: Apr 25, 1984

Status: Other Assistance

Development Stage: Production & Marketing

Summary: Referred to NATAS for licensing assistance.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE #	257	DOE Coordinator	D.G.Mello	Contact:	Richard H Baasch	
OERI #	9758	DOE Program Off:	CE		Joseph Wosser	
Category:	Miscellaneous				324 Buell Street	
					Ravenna	NE 68869
					308-452-9171	
Title:	Method and Apparatus for Melting Snow					
Inventor:	Richard H Baasch			Patent Applied For		
State/Country:	NE			Grant #	FGD1-85CE152D4	
Company:						
Description:	A process to remove snow from city streets by melting instead of hauling to dump sites.					

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	26 Weeks	Award Date:	Aug 26, 1985
Received by DOE from NBS:	Apr 30, 1984		
Status:	Award	Award Amount:	\$60,491
		Contract Period:	
Development Stage:	Production Engineering		Aug 26, 1985 -

Summary: A grant of \$60,492 was awarded on August 26, 1985 to build and test three prototypes in cooperation with various municipalities.

=====

DOE #	258	DOE Coordinator	J.Aellen	Contact:	Anthony T Rallis	
OERI #	9525	DOE Program Off:	CE		304 Caporal Court	
Category:	Industrial Processes				El Paso	TX 79932
					915-584-9171	
Title:	Corrosion Protection Process for Bore Hole Tool					
Inventor:	Anthony T Rallis			Grant #	FGD1-85CE15213	
State/Country:	TX					
Company:						
Description:	A process for providing an aluminum alloyed surface on iron-base alloys for down-hole tools and parts for improved corrosion resistance replacing more expensive alloys such as chromium and nickel-based alloys and others. This process would be used primarily for parts used in gas and oil wells.					

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	48 Weeks	Award Date:	Apr 22, 1985
Received by DOE from NBS:	May 15, 1984		
Status:	Award	Award Amount:	\$67,766
		Contract Period:	
Development Stage:	Concept Development		Apr 22, 1985 -

Summary: A grant of \$67,766 was awarded on April 22d, 1985 to prepare samples suitable for laboratory and field tests.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 259 DOE Coordinator G.K.Ellis Contact: William A Jones
P O Box #621
OERI # 9812 DOE Program Off: CE Lotus CA 95651
916-622-9171
Category: Industrial Processes
Title: Hydrostatic Support Sleeve and Rod - Gas Release Probe
Inventor: William A Jones
State/Country: CA
Company: Grant # FG01-85CE15216
Description: A mechanism for reducing or eliminating gas-lock problems with oil well pumps.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 25 Weeks Award Date: Apr 15, 1985
Received by DOE from NBS: May 17, 1984
Status: Award Award Amount: \$81,220 Contract Period:
Development Stage: Prototype Test Apr 15, 1985 -

Summary: A grant of \$81,220 was awarded on April 15, 1985 to build and test a prototype in cooperation with oil producing companies. Inventor attended CPW workshop in Washington, DC during 1985.

=====

DOE # 260 DOE Coordinator D.G.Mello Contact: Edward S Kress, President
KRESS CORPORATION
OERI # 9736 DOE Program Off: CE P O Box #368
Brimfield IL 61517
309-446-9171
Category: Industrial Processes
Title: Method and Apparatus for Handling and Dry Quenching Coke
Inventor: Edward S Kress Patent # 4 285 772
State/Country: IL
Company: KRESS CORPORATION Grant # FG01-85CE15227
Description: Method and apparatus for handling and dry quenching coke which is pollution free, producing higher yields of quality coke with a recovery means of sensible heat for a useful purpose.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Award Date: May 31, 1985
Received by DOE from NBS: May 24, 1984
Status: Award Award Amount: \$57,773 Contract Period:
Development Stage: Production & Marketing May 31, 1985 -

Summary: A grant of \$57,773 was awarded on May 31st, 1985 to build and test a prototype.

=====

DOE # 261 DOE Coordinator G.K.Ellis Contact: Paul E Bracegirdle

OERI # 969D DOE Program Off: CE

Category: Industrial Processes

Title: A New Apparatus for Making Asphalt Concrete

Inventor: Paul E Bracegirdle

Patent # 4 378 162 & Others

State/Country: PA

Company: Mix Design Methods Inc

Description: An asphalt concrete manufacturing process that reduces energy requirements by recovering the latent heat of vaporization from the moisture removed during the manufacturing process and eliminates air pollution by using modern heat transfer methods.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: May 24, 1984

Status: Other Assistance

Development Stage: Production Engineering

Summary: Inventor licensed his technology to some foreign company. There is no further action required of DOE.

=====

DOE # 262 DOE Coordinator J.Aellen

Contact: Kai-Chih Chang
Innovative Tech Laboratory
2339 Davison Avenue
Richland WA 99352
509-375-9171

OERI # 9691 DOE Program Off: CE

Category: Miscellaneous

Title: Energy Saving Pump and Pumping System

Inventor: Kai-Chih Chang

Patent # 4 396 347

State/Country: WA

Company:

Grant # FGD1-85CE152D7

Description: A centrifugal pump and pumping system that automatically provide recirculating flow at low output flows when pump cooling is needed, and that recover hydraulic energy in response to reduced output flows.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Award Date: Apr 17, 1985

Received by DOE from NBS: Jun 2D, 1984

Status: Award Award Amount: \$85,837 Contract Period:

Development Stage: Working Model Apr 17, 1985 -

Summary: A grant of \$85,837 was awarded on April 17th, 1985 to build and test the proposed pump.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 263 DOE Coordinator J.Aellen Contact: William Tunderman
OERI # 9849 DOE Program Off: CE
Category: Industrial Processes
Title: Method for Reconditioning Rivetless Chain Links

Inventor: William Tunderman Patent # 4 229 962
State/Country: IL Grant # FG01-85CE1S228
Company:
Description: An upsetting process used to recondition chain links of the type used on industrial conveyors.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 18, 1985

Received by DOE from NBS: Jun 22, 1984

Status: Other Assistance

Development Stage: Limited Production/Marketing

Summary: Inventor received about \$12,000 to conduct a market survey from the State of Illinois. Further assistance will be considered by DOE at the completion of the market survey.

=====

DOE # 264 DOE Coordinator J.Aellen Contact: Donald F Othmer
OERI # 9202 DOE Program Off: CE The Polytechnic Institute
333 Jay Street
Brooklyn NY 11201
Category: Industrial Processes 212-643-9171
Title: Desulfurization of Coal

Inventor: Donald F Othmer Patent # 4 251 277
State/Country: NY Grant # FG01-85CE1S206
Company:
Description: A process for the selective wet oxidation of the sulfur content of high sulfur coal into sulfur trioxide or other use in order to produce a low sulfur coal for the slurry pipeline transport or other use.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 61 Weeks Award Date: Jul 3, 1985

Received by DOE from NBS: Jun 22, 1984

Status: Award Award Amount: \$71,244 Contract Period:

Development Stage: Engineering Design Jul 3, 1985 - Dec 2, 1985

Summary: A grant of \$71,244 was awarded on July 3rd, 1985 to perform laboratory tests for desulphurization of coal by Zimpro, Inc., located in Wisconsin.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	265	DOE Coordinator	G.K.Ellis	Contact:	John W Richardson
OERI #	9918	DOE Program Off:	CE		J Sherman Richardson
Category:	Industrial Processes				Route Thres, Box #81
					Colfax
					318-627-9171
Title:	Method and Apparatus for Direct Application of Treatment				
	Liquid to Growing Vegetation				
Inventor:	John W Richardson			Patent Applied For	
State/Country:	LA			Grant #	FGD1-85CE15217
Company:					
Description:	A tractor-mounted applicator that wipes herbicide onto growing weeds.				

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	26 Weeks	Award Date:	Apr 2, 1985
Received by DOE from NBS:	Jul 18, 1984		
Status:	Award	Award Amount:	\$86,967
		Contract Period:	
Development Stage:	Prototype Development		
			Apr 2, 1985 -

Summary: A grant of \$86,967 was awarded on April 2, 1985 to build and test a prototype. Testing will be performed at Louisiana State University.

=====

DOE #	266	DOE Coordinator	J.S.Dhillon	Contact:	Dan Egosi
OERI #	9582	DOE Program Off:	CE		
Category:	Buildings, Structures & Components				
Title:	Energy Conversion Method				
Inventor:	Dan Egosi			Patent #	4 282 070
State/Country:	Israel				
Company:					
Description:	A novel "Heat Pump" using engine-driven compressor and steam ejectors to compress low pressure steam to more useful levels.				

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	71 Weeks	Decision Date:	Sep 13, 1985
Received by DOE from NBS:	Aug 22, 1984		
Status:	Other Assistance		
Development Stage:	Concept Development		

Summary: Inventor needs licensing help. DOE sent him names of appropriate companies in the U.S. to be contacted for licensing. He visited NBS and complained about some of the negative comments in the recommendation. NBS will study his suggestions.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 267 DOE Coordinator J.Aellen Contact: Shang-I Cheng
OERI # 9565 DOE Program Off: CE Seventeen Woodsend Drive
Matawan NJ 07747
201-583-9171

Category: Industrial Processes

Title: Integrated Gasification of Coal, Municipal Solid Wastes and
Sludge

Inventor: Shang-I Cheng Patent # 4 357 713
State/Country: NJ
Company: Grant # FGD1-85CE15222

Description: Hardware and a process for gasifying coal, solid wastes and sewage sludge.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Award Date: May 10, 1985

Received by DOE from NBS: Aug 22, 1984

Status: Award Award Amount: \$70,000 Contract Period:

Development Stage: Prototype Development May 10, 1985 -

Summary: A grant of \$70,000 was awarded on May 10, 1985 to perform laboratory tests, computer simulation and preliminary design.

=====

DOE # 268 DOE Coordinator 850918en Contact: Robert L Moody

OERI # 9794 DOE Program Off: CE

Category: Fossil Fuels

Title: Apparatus for Enhancing Chemical Reactions

Inventor: Harold T Sawyer Patent # 4 369 100 & Others
State/Country: CA
Company: Moody/Langworthy Partners

Description: A process for using ultrasonic energy to enhance chemical reactions and extraction processes.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 18, 1984

Received by DOE from NBS: Aug 22, 1984

Status: Analysis

Development Stage: Prototype Test

Summary: Received preliminary work proposal. It is under study at DOE.

DOE # 269 DOE Coordinator G.K.Ellis Contact: Richard J Avery, Junior
OERI # 9971 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Refrigerant Accumulator and Charging Apparatus

Inventor: Richard J Avery, Junior
State/Country: TX
Company:

Patent Applied For

Description: An accumulator-charger installed in the suction line of a vapor-compression refrigeration unit. It provides for accumulation of liquid refrigerant/oil thereby preventing liquid refrigerant from being drawn into the compressor, and intended to prevent overcharging or undercharging the refrigerant system.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Decision Date: Sep 7, 1984

Received by DOE from NBS: Aug 30, 1984

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE. Inventor attended commercialization workshop in Leesburg, VA during 1985.

DOE # 270 DOE Coordinator J.S.Ohillon Contact: Shih-Chih Chang
OERI # 9767 DOE Program Off: CE 2339 Davison Avenue
Richland WA 99352
SD9-375-3123

Category: Industrial Processes

Title: Method of Energy Recovery for Wastewater Treatment

Inventor: Shih-Chih Chang
State/Country: WA
Company:

Grant # FGD1-85CE1521D

Description: A process and apparatus to recover available hydraulic energy for wastewater aeration by using a specially designed hydraulic gas compressor.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 47 Weeks Award Date: Apr 5, 1985

Received by DOE from NBS: Sep 7, 1984

Status: Award Award Amount: \$65,045 Contract Period:

Development Stage: Engineering Design Apr 5, 1985 -

Summary: A grant of \$65,045 was awarded on April 5th, 1985 to optimize the variables in a bench-scale test set-up. The inventor has prepared and instrumented this test set-up. He will be conducting tests shortly to determine optimum process variables.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 271 DOE Coordinator G.K.Ellis Contact: William B Retallick
OERI # 9734 DOE Program Off: CE 1432 Johnny's Way PA 19380
West Chester
215-399-1371
Category: Miscellaneous
Title: Hydrogen Storage System

Inventor: William B Retallick
State/Country: PA
Company: Grant # FG01-85CE15230

Description: A new geometric design hydrogen storage system for rapid heat cycling, using metal hydride systems in finned tubes.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 45 Weeks Award Date: Jun 21, 1985
Received by DOE from NBS: Sep 26, 1984
Status: Award Award Amount: \$50,338 Contract Period:
Development Stage: Concept Development Jun 21, 1985 -
Summary: A grant of \$50,338 was awarded on June 21st, 1985 to build and test a prototype storage system.

=====

DOE # 272 DOE Coordinator J.S.Dhillon Contact: Robert M Roeglin
OERI # 9730 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: V-Plus System

Inventor: Robert M Roeglin Patent # 4 275 570
State/Country: WI
Company: Vilter Manufacturing Corp Grant # FG01-85CE15245

Description: A method to cool lubricating oil in a positive displacement rotary screw compressor. A variable speed pump injects liquid refrigerant into the compressor discharge line.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Jul 28, 1985
Received by DOE from NBS: Sep 27, 1984
Status: Procurement
Development Stage: Production & Marketing
Summary: A grant package of \$100,000 was submitted for approval on July 28, 1985 for testing the lubricant cooling system manufactured by Vilter Manufacturing Corporation. The test will be conducted at the Herrick Laboratory at Purdue University. Due to the relatively large grant request, approval is in doubt.

=====

DOE # 273 DOE Coordinator J.S.Dhillon Contact: Julius Czaja

OERI # 9866 DOE Program Off: CE

Category: Combustion Engines & Components

Title: Open Cycle Latent Heat Engine

Inventor: Julius Czaja

Patent # 4 106 294

State/Country: NY

Company:

Description: A novel Engine that uses relatively low temperature water as a heat source.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 13, 1985

Received by DOE from NBS: Sep 27, 1984

Status: Analysis

Development Stage: Concept Development

Summary: DOE had two meetings and several telephone conversations with the inventor. He cannot decide what course of action to follow.

=====

DOE # 274 DOE Coordinator D.G.Mello Contact: Nathan E Passman

OERI # 7911 DOE Program Off: CE

Category: Miscellaneous

Title: Flexible Lighting - Fluorescent Lighting Operating at Radio Frequency

Inventor: Nathan E Passman

Patent # 3 157 823 & Others

State/Country: IL

Company:

Grant # FGD1-85CE15244

Description: A lighting system consisting of electrodeless gas-containing capsules, strung in a clear plastic tubular jacket. The capsules are excited by standing waves produced by a radio frequency generator.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 74 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Sep 28, 1984

Status: Analysis

Development Stage: Production & Marketing

Summary: Received a preliminary proposal. It is under study at DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 275 DOE Coordinator D.G.Mello Contact: Don E Avery

OERI # 10115 DOE Program Off: CE

Category: Miscellaneous

Title: Low Head - High Volume Pump

Inventor: Don E Avery

State/Country: HI

Company:

Description: A low-head, high volume double-acting piston pump for use in wind-driven water pumping stations.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 25 Weeks Decision Date: Oct 22, 1984

Received by DOE from NBS: Oct 15, 1984

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 276 DOE Coordinator J.Aellen

Contact: Robert E Salomon
Chemistry Department
Temple University
Philadelphia PA 19122
215-787-7125

OERI # 9713 DOE Program Off: CE

Category: Fossil Fuels

Title: Gas Concentration cells as Converters of Heat into Electrical Energy

Inventor: Robert E Salomon

State/Country: PA

Company:

Grant # FG01-85CE15218

Description: A system for using gas concentration cells to convert waste heat directly into electricity through heat driven electrochemical reactions.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Award Date: Jun 1, 1985

Received by DOE from NBS: Oct 25, 1984

Status: Award Award Amount: \$79,957 Contract Period:

Development Stage: Concept Development Apr 26, 1985 -

Summary: A grant of \$79,957 was awarded on June 1st, 1985 to Temple University for building and testing a prototype model.

Inventions Recommended for DOE Consideration by NBS' OER1 - A Brief Status Report

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DOE # 277 DOE Coordinator J.Aellen Contact: Guy C Dempsey

OER1 # 10221 DOE Program Off: CE

Category: Industrial Processes

Title: Electronic Conveyor Control Apparatus

Inventor: Guy C Dempsey

Patent # 4 372 439

State/Country: VA

Company:

Grant # FG01-85CE15247

Description: Electronic conveyor control, U S Patent #4,372,439 dated February 8, 1983, describes an automatic start/stop system for conveyor belts. Tests in three post offices over two 30 day periods (with and without the control) show a 50% reduction in energy used to drive the belts.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 24 Weeks Decision Date: Sep 18, 1985

Received by DOE from NBS: Nov 23, 1984

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Received preliminary proposal. It is under study at DOE.

=====

DOE # 278 DOE Coordinator P.M.Hayes

Contact: James M Stewart

OER1 # 9238 DOE Program Off: CE

115 Sylvan Way
Greenville
803-242-9492

SC 29605

Category: Direct Solar

Title: Complete System for Large Solar Water Heating and Storage

Inventor: James M Stewart

Patent # 4 340 033 & Others

State/Country: SC

Company: Solar Fundamentals Inc

Grant # FG01-85CE15223

Description: An integrated system of solar collection and thermal storage for service water heating. It is a large-scale water heating system utilizing a heat pipe arrangement to extract thermal energy from an air-based solar collector.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 100 Weeks Award Date: Jun 25, 1985

Received by DOE from NBS: Nov 29, 1984

Status: Award

Award Amount: \$52,969

Contract Period:

Development Stage: Production Engineering

Jun 25, 1985 -

Summary: A grant of \$52,969 was awarded on June 25th, 1985 to build and test a prototype solar water heating system.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE #	279	DOE Coordinator	P.M.Hayes	Contact:	Douglas R Reich	
OERI #	9638	DOE Program Off:	CE		209 Gazelle Drive	
					North Fort Myers	FL 33903
					813-995-0208	

Category: Industrial Processes

Title: Method and Means for Preventing Frost Damage to Crops

Inventor: Douglas R Reich
State/Country: FL
Company:

Patent Applied For

Grant # FG01-85CE15231

Description: A mobile machine for preventing frost damage to crops by taking in warmer air from above crop level, heating the air slightly with a burner, and blowing the air horizontally through the crops at low level.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	98 Weeks	Award Date:	Aug 26, 1985
Received by DOE from NBS:	Nov 29, 1984		
Status:	Award	Award Amount:	\$74,280
		Contract Period:	
Development Stage:	Working Model		Aug 26, 1985 -

Summary: A grant of \$74,280 was awarded on August 26th, 1985 to fabricate a prototype and evaluate it in a real situation.

=====

DOE #	280	DOE Coordinator	J.Aellen	Contact:	Andrew W Marr, Junior	
OERI #	9509	DOE Program Off:	CE		P O Box #1464	
					Ardmore	OK 73401
					405-657-4202	

Category: Fossil Fuels

Title: Down Hole and Above Ground Resistance Heating for Paraffin Elimination

Inventor: Andrew W Marr, Junior
State/Country: OK
Company:

Patent # 4 303 128 & Others

Grant # FG01-85CE15220

Description: A method for removing paraffin from down-hole oil well tubing by use of resistance heating induced in the tubing to heat and melt the paraffin.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	69 Weeks	Award Date:	Aug 28, 1985
Received by DOE from NBS:	Nov 30, 1984		
Status:	Award	Award Amount:	\$58,286
		Contract Period:	
Development Stage:	Prototype Test		Aug 28, 1985 -

Summary: A grant of \$58,286 was awarded on August 28, 1985.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

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DOE # 281 DOE Coordinator D.G.Mello Contact: Arthur D Sams
Polar Products
OERI # 10256 DOE Program Off: CE 2908 Oregon Court, 1-11
Torrence CA 90503
Category: Buildings, Structures & Components 213-320-3514
Title: Sun Synchronous Solar Powered Refrigerator

Inventor: Arthur D Sams
State/Country: CA
Company: Polar Products Grant # FG01-85CE15219

Description: Photovoltaic powered refrigerator. Key features are durability, good insulation, efficient vapor/compression cycle, thermal storage, low cost, and sun synchronous operation without the use of batteries.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Award Date: Aug 12, 1985
Received by DOE from NBS: Dec 18, 1984
Status: Award Award Amount: \$69,415 Contract Period:
Development Stage: Prototype Development Aug 12, 1985 -

Summary: A grant of \$69,415 was awarded on August 12, 1985 to build and test a prototype. Recipient will contribute \$24,960 in addition to the grant.

=====

DOE # 282 DOE Coordinator J.S.Dhillon Contact: Eugene Tippmann
4221 Boca Trail
OERI # 10002 DOE Program Off: CE Fort Wayne IN 46815
219-423-2456
Category: Buildings, Structures & Components
Title: Insulated Siding

Inventor: Eugene Tippmann
State/Country: IN
Company: Grant # FG01-85CE15240

Description: An insulated siding for use on houses. Both vinyl and aluminum siding are fabricated with urethane foam averaging 1/2" thick and lined with aluminum foil backing.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Award Date: Aug 29, 1985
Received by DOE from NBS: Dec 18, 1984
Status: Award Award Amount: \$57,798 Contract Period:
Development Stage: Prototype Development Aug 29, 1985 -

Summary: A grant of \$57,798 was awarded on August 29, 1985 to Ball State University to build and test prototype insulated sidings.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 283 DOE Coordinator P.M.Hayes Contact: Mark A Smith
OERI # 1D182 DOE Program Off: CE Transmet Corporation
4290 Perimeter Drive
Columbus OH 43228
614-276-5522
Category: Buildings, Structures & Components
Title: Aluminum Roofing Chips

Inventor: Tom Atterbury
State/Country: OH
Company: Transmet Corporation Grant # FGD1-85CE15232
Description: A reflective coating for application to built-up roofing. Aluminum chips are spray-applied to surfaces with good adhesion.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Award Date: Jun 27, 1985
Received by DOE from NBS: Dec 18, 1984
Status: Award Award Amount: \$78,878 Contract Period:
Development Stage: Working Model Jun 27, 1985 -
Summary: A grant of \$78,878 was awarded on June 27th, 1985 to optimize the size, shape and composition of the aluminum roofing chip system.

=====

DOE # 284 DOE Coordinator J.S.Dhillon Contact: Anthony N Fresco
OERI # 9662 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Atomized Oil-Injected Rotary Screw Compressors
Inventor: Anthony N Fresco
State/Country: NY
Company: Grant # FGD1-85CE15245
Description: An atomized oil-injection system to improve the power and volumetric efficiencies of the rotary compressors.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Sep 13, 1985
Received by DOE from NBS: Jan 24, 1985
Status: Procurement
Development Stage: Concept Definition
Summary: A grant package of \$100,000 was submitted for approval for testing Mr. Fresco's atomized oil injection concept for improved efficiency, at Purdue University's Harrick Laboratory. Due to the relatively large amount of the grant request, the approval is in doubt.

=====

DOE # 285 DOE Coordinator D.G.Mello Contact: Hermann Ernst

OERI # 10167 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Novel Fluid Ring (F/R) Seal Systems for Railroad Axle
Bearing Systems

Inventor: Hermann Ernst

State/Country: MN

Company:

Description: A lubricant seal for railroad car axle bearings, the seal having no direct
frictional contact between rotating and non-rotating parts and depending on
dynamic effects for sealing.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 35 Weeks Decision Date: Mar 4, 1985

Received by DOE from NBS: Jan 25, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 286 DOE Coordinator G.K.Ellis Contact: Momtaz N Mansour

OERI # 10313 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Use of Pulse-Jet for Atomization of Coal/Water Mixture

Inventor: Momtaz N Mansour

State/Country: MD

Company: Management and Technology Consultants

Description: Propane or a fuel gas is burned in a pulse-jet. The pulse-jet exhaust is used
aerodynamically to atomize a stream of coal-water-mixture injected into a
large steam boiler combustor.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 24 Weeks Decision Date: Mar 4, 1985

Received by DOE from NBS: Jan 25, 1985

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE. Inventor is under consideration for
assistance by Pittsburgh Energy Technology Center, a DOE laboratory.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 287 DOE Coordinator J.S.Dhillon Contact: Don J Marshall
OERI # 10259 DOE Program Off: CE 1087 Rodgers Road
P O Box #159
Churchton MD 20733
301-867-2135

Category: Transportation Systems, Vehicles & Components

Title: Automatic Variable Pitch Marine Propeller

Inventor: Don J Marshall Patent # 4 297 079 & Others
State/Country: MD
Company: GSM Company Grant # FG01-85CE15243

Description: A variable geometry marine propeller having the blades pivoted and balanced so as to automatically adjust propeller pitch, diameter, and basic area ratio in response to shaft speed and hydrodynamic load, thereby enabling the driving engine to function at optimum RPM and fuel efficiency over a broad range of hull speeds and loadings.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 30 Weeks Award Date: Sep 6, 1985

Received by DOE from NBS: Jan 25, 1985

Status: Award Award Amount: \$41,593 Contract Period:

Development Stage: Prototype Test Sep 6, 1985 -

Summary: A grant of \$41,593 was awarded on September 6, 1985, to build and test the proposed propeller. The test will take place at Mississippi State University in cooperation with Sea Grant Advisory Service.

=====

DOE # 288 DOE Coordinator G.K.Ellis Contact: Norman L Dickinson

OERI # 10307 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Dickinson Pure Air Combustion (DIPAC) and Modified DIPAC (MODIPAC)

Inventor: Norman L Dickinson Patent # 4 380 960 & Others
State/Country: CA
Company:

Description: A method of burning coal or coal/water/mixture at high pressure without resultant air pollution.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 24 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Jan 30, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Received preliminary proposal; it is under study.

=====

DOE # 289 DOE Coordinator P.M.Hayes Contact: Marc S Caspe
OERI # 10311 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: An Earthquake Barrier

Inventor: Marc S Caspe Patent # 3 638 377
State/Country: CA
Company: M. S. Caspe Company

Description: A concept to absorb the energy of an earthquake with bilinear force-deflection devices at the foundation of a building, thereby providing positive protection against inelastic distortions that cause building damage. This concept is claimed to avoid damage to the buildings during an earthquake and save human life.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 21 Weeks Decision Date: Sep 16, 1985

Received by DOE from NBS: Feb 28, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Received preliminary proposal; it is under study.

=====

DOE # 290 DOE Coordinator J.Aellen Contact: Jerry Aleksandrow
OERI # 9807 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Low Energy Ice Making Apparatus

Inventor: Jerry Aleksandrow Patent # 4 357 807
State/Country: IL
Company: Universal Ice Machine Products

Description: In this ice-making apparatus, ice is progressively formed on evaporator plates and harvested by a secondary condensor grid heated by the warm liquid refrigerant discharged by the primary water cooler condensor.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Mar 11, 1984

Received by DOE from NBS: Feb 28, 1985

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 291 DOE Coordinator G.K.Ellis Contact: Jerry Tartaglino

OERI # 1D331 DOE Program Off: CE

Category: Buildings, Structures & Components

Title: Selective Zone Isolation for HVAC System

Inventor: Jerry Tagtaglino

Patent Applied For

State/Country: TX

Company:

Description: A method for controlling air flow from a central HVAC system in a programmed way so that only selected zones within a building receive air flow during specified time periods

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Mar 11, 1985

Received by DOE from NBS: Feb 28, 1985

Status: Analysis

Development Stage: Working Model

Summary: Recommendation under consideration by DOE. Inventor attended commercialization workshop in Seattle, WA during 1985.

=====

DOE # 292 DOE Coordinator J.Aellen

Contact: Thomas F Francovitch

OERI # 10297 DOE Program Off: CE

7348 Carved Stone
Columbia MD 21045
301-997-0562

Category: Direct Solar

Title: Roof Construction Having Membrane and Photo Cells

Inventor: Thomas F Francovitch

Patent Applied For

State/Country: MD

Company:

Grant # FG01-85CE15239

Description: A building roof construction that also serves as a substrate, electrical interconnection, and protective covering for an array of flexible voltaic elements intended to generate electrical power for use in the building or elsewhere.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Award Date: Aug 26, 1985

Received by DOE from NBS: Feb 28, 1985

Status: Award Award Amount: \$40,135 Contract Period:

Development Stage: Laboratory Test Aug 26, 1985 -

Summary: A grant of \$40,135 was awarded on August 28, 1985 to perform laboratory tests on the roof membrane and photocells.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 293 DOE Coordinator J.S.Dhillon Contact: Randell D Ball

OERI # 10130 DOE Program Off: CE

Category: Fossil Fuels

Title: "Therm-A-Valve" - Insulated Valve Coverings

Inventor: Randell D Ball

Patent Applied For

State/Country: OK

Company: PFI, Inc

Description: A solar powered system to keep critical flow control valves from freezing on gas wells during cold weather.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 13, 1985

Received by DOE from NBS: Mar 29, 1985

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Preliminary proposal received to build and test five prototype models for Therm-A-Valve for \$87,829.

=====

DOE # 294 DOE Coordinator J.S.Dhillon

Contact: Carl L Sterner
Route Four, Box #372
Bakersfield CA 93309
805-589-3355

OERI # 10077 DOE Program Off: CE

Category: Industrial Processes

Title: Highway Power Patcher

Inventor: Carl L Sterner

Patent Applied For

State/Country: CA

Company:

Grant # FG01-85CE15241

Description: A portable self-propelled pavement patching machine which blows debris from a distressed area of pavement, mixes and applies an unheated crushed rock and asphalt patching material, and compacts the patch by means of a roller.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Award Date: Aug 15, 1985

Received by DOE from NBS: Mar 29, 1985

Status: Award Award Amount: \$60,031 Contract Period:

Development Stage: Prototype Test Aug 15, 1985 -

Summary: A grant of \$60,031 was awarded on August 15, 1985 to build and test a self-propelled highway pavement patching machine. Mr. Sterner has already received numerous inquiries about his machine from all over the U.S.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 295 DOE Coordinator J.Aellen Contact: J Paul Pemsler
OERI # 10185 DOE Program Off: CE Castle Technology Corporation
Fifty-Two Dragon Court
Woburn MA 01801
617-933-5634
Category: Industrial Processes
Title: Improved Method of Electroplating Aluminum for Corrosion Resistance
Inventor: J Paul Pemsler
State/Country: MA
Company: Castle Technology Corporation Grant # FG01-85CE15236
Description: A method for electroplating ferrous metals with aluminum for improved corrosion resistance.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 44 Weeks Award Date: Aug 28, 1985
Received by DOE from NBS: Mar 29, 1985
Status: Award Award Amount: \$69,000 Contract Period:
Development Stage: Laboratory Test Aug 28, 1985 -
Summary: A grant of \$70,000 was awarded on August 28, 1985 to build and test a prototype.

=====

DOE # 296 DOE Coordinator P.M.Hayes Contact: Raymond Hunter
OERI # 9516 DOE Program Off: CE
Category: Buildings, Structures & Components
Title: Shower Bath Economizer
Inventor: Raymond Hunter Patent # 4 372 372
State/Country: TN
Company: Tennessee Energy Cons Innov

Description: A heat Exchanger installed at a shower-booth or tub drain which transfers heat from the drain water to the incoming cold water, thereby reducing the amount of energy required to heat the water.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 87 Weeks Decision Date: Sep 16, 1985
Received by DOE from NBS: Mar 29, 1985
Status: Analysis
Development Stage: Production Engineering
Summary: Received preliminary proposal; It is under study.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE #	297	DOE Coordinator	J.Aellen	Contact:	E M Talbott
OERI #	10261	DOE Program Off:	CE		1314 Doves Cove Road
Category:	Buildings, Structures & Components				Towson MD 21204
Title:	Series (Two-Wire) V-Controller				

301-321-0131

Inventor:	E M Talbott	Patent Applied For
State/Country:	MD	
Company:	Etalon Corporation	Grant # FG01-85CE15233

Description: An electronic light dimmer for fluorescent lamps, that will mount in a single two-wired switch box without the need for re-wiring or replacing conventional lamp ballasts with "dimming" ballasts.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	23 Weeks	Award Date:	Aug 19, 1985
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Received by DOE from NBS: Mar 29, 1985

Status:	Award	Award Amount:	\$51,180	Contract Period:
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Development Stage:	Concept Development	Aug 19, 1985 -
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Summary: A grant of \$51,771 was awarded on August 18, 1985 to design and build a prototype. Tests will be conducted in phase II.

=====

DOE #	298	DOE Coordinator	J.Aellen	Contact:	David L Swartz
OERI #	10254	DOE Program Off:	CE		
Category:	Buildings, Structures & Components				
Title:	Three Tenths Degree Kelvin Closed Cycle Refrigeration System				

Inventor:	David L Swartz	Grant # FG01-85CE15248
State/Country:	OH	
Company:	Cryosystems, Inc.	

Description: Closed cycle refrigeration system to provide cooling to .3 degrees Kelvin. Does not consume helium or other liquid cryogens.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing:	34 Weeks	Decision Date:	Sep 18, 1985
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Received by DOE from NBS: Apr 19, 1985

Status: Decision Phase

Development Stage: Concept Development

Summary: A grant package is being prepared to build and test a prototype.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 299 DOE Coordinator G.K.Ellis Contact: William R Trutna

OERI # 9873 DOE Program Off: CE

Category: Industrial Processes

Title: Process for Using Cocurrent Contacting Distillation Column

Inventor: William R Trutna

Patent # 4 361 469

State/Country: TX

Company:

Description: A new fractionator tray design which achieves higher distillation column output through high-velocity cocurrent vapor-liquid flow in the zones between the trays.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Apr 19, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Received preliminary proposal; it is under study.

=====

DOE # 300 DOE Coordinator G.K.Ellis Contact: John Patton

OERI # 10194 DOE Program Off: CE

Category: Fossil Fuels

Title: Casing Stabbing Apparatus

Inventor: James McArthur

Patent # 4 440 220

State/Country: OK

Company: Rural Enterprises, Inc.

Description: A retrofittable hardware design for the rapid alignment of well casing sections during rig operations to prevent thread damage due to misalignment and cross threading.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Apr 30, 1985

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Received preliminary proposal; it is under study.

=====

DOE # 301 DOE Coordinator D.G.Mello Contact: Don E Avery
OERI # 10469 DOE Program Off: CE
Category: Combustion Engines & Components
Title: Pump Control System for Windmills

Inventor: Don E Avery Patent # 4 392 785
State/Country: HI
Company:

Description: A mechanism for automatically controlling the stroke of wind-driven
water-pumps so as to match pump operation to the available wind energy

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Apr 30, 1985

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Received preliminary proposal; it is under study.

=====

DOE # 302 DOE Coordinator J.Aellen Contact: John H Burk
OERI # 10539 DOE Program Off: CE
Category: Industrial Processes
Title: Carri-Cel Impact Breaker and Counterflow Impact Rock Breaker

Inventor: John H Burk Patent Applied For
State/Country: CA
Company:

Description: A vertical shaft impact rock breaker having a direct-drive vertical shaft
motor - and - an impact rock breaker in which the thrown rock is directed back
toward the impeller so that most rock breakage occurs during collisions of
thrown and returning rock.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 29 Weeks Decision Date: May 6, 1985

Received by DOE from NBS: Apr 30, 1985

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 303 DOE Coordinator J.Aellen Contact: Nicholas Archer Sanders

OERI # 10170 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Battery Heating Device

Inventor: Nicholas Archer Sanders

Patent # 4 258 677

State/Country: VT

Company:

Description: An automotive battery heating device which stores exhaust heat in a phase-change storage material and which includes the necessary heat exchangers and controls to transfer heat to the battery to facilitate cold weather starting.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 48 Weeks Decision Date: Sep 18, 1985

Received by DOE from NBS: May 31, 1985

Status: Decision Phase

Development Stage: Prototype Test

Summary: Received preliminary proposal; cost is being negotiated.

=====

DOE # 304 DOE Coordinator G.K.Ellis Contact: Deborah D Chung

OERI # 10315 DOE Program Off: CE

Category: Miscellaneous

Title: Exfoliated Graphite Fibers

Inventor: Deborah D Chung

Patent Applied For

State/Country: PA

Company:

Description: A new material, exfoliated graphite fibers, a novel form of fiber, and a method for producing them.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Jun 3, 1985

Received by DOE from NBS: May 31, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 305 DOE Coordinator J.Aellen Contact: Max McElmurry

OERI # 10257 DOE Program Off: CE

Category: Industrial Processes

Title: Automatic Filter Network Protection, Failure Detection and
Correction System and Method

Inventor: Harold L Bowman

Patent # 4 356 007

State/Country: AR

Company: White River Technologies Inc

Description: A flap valve, to be used in fabric bag filter systems such as those used in
coal-burning power plants, which automatically shuts off the flow of gas and
fly ash through ruptured filter bags.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Jun 3, 1985

Received by DOE from NBS: May 31, 1985

Status: Analysis

Development Stage: Production Engineering

Summary: Recommendation under consideration by DOE.

=====

DOE # 306 DOE Coordinator J.S.Dhillon Contact: John W Ackley, III

OERI # 10045 DOE Program Off: CE

Category: Miscellaneous

Title: An Efficiency Computer for Heated or Air Conditioned
Buildings

Inventor: John W Ackley, III

State/Country: NY

Company: Energy Data Company, Inc

Description: Microprocessor-based device continuously evaluates overall space-conditioning
performance. "Feedback" is used to teach a new, useful concept of efficiency
to building owners, occupants, and maintenance personnel.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Jul 1, 1985

Received by DOE from NBS: Jun 28, 1985

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 307 DOE Coordinator D.G.Mello Contact: Andrew Wortman

OERI # 10454 DOE Program Off: CE

Category: Transportation Systems, Vehicles & Components

Title: Vortex Generators for Aft Regions of Aircraft Fuselages

Inventor: Andrew Wortman

State/Country: CA

Company:

Description: A method for using small vortex generators at the aft end of aircraft fuselages, (particularly those with rear loading doors) to energize the flow in that region, reduce flow separation, and reduce form drag.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Jul 1, 1985

Received by DOE from NBS: Jun 28, 1985

Status: Analysis

Development Stage: Concept Development

Summary: Received preliminary proposal; it is under study.

=====

DOE # 308 DOE Coordinator J.Aellen Contact: Jay Read

OERI # 10201 DOE Program Off: CE

Category: Industrial Processes

Title: Binary Azeotropic, Hot Gas, Fat Extraction Process

Inventor: Jay Read

Patent Applied For

State/Country: IN

Company: Plymouth Fertilizer Company, Inc

Description: A solvent extraction process for rendering animal wastes. Invention would use n - heptane as to extract the fat and would be recycled. Solids recovered will be produced at lower temperatures print 50sent processes.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Jul 1, 1985

Received by DOE from NBS: Jun 28, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

=====

DOE # 309 DOE Coordinator D.G.Mello Contact: Robert C LeMay

OERI # 10351 DOE Program Off: CE

Category: Industrial Processes

Title: Process of Smelting with Submerged Burner

Inventor: Robert N Rose

Patent # 4 203 761

State/Country: CT

Company: R C LeMay Associates, Inc

Description: A submerged burner for melting and refining metals. The design produces submerged combustion process resulting in a uniform oxidizing or reducing atmosphere circulating through the molten zone.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Jul 1, 1985

Received by DOE from NBS: Jun 28, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 310 DOE Coordinator G.K.Ellis Contact: Robert M Hunter

OERI # 10308 DOE Program Off: CE

Category: Industrial Processes

Title: Portable Wastewater Flow Metering Device

Inventor: Robert M Hunter

Patent Applied For

State/Country: WA

Company:

Description: A portable venturi type flowmeter for measuring liquid flow in sewers under either full flow or partial flow conditions.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 47 Weeks Decision Date: Jul 31, 1985

Received by DOE from NBS: Jul 31, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 311 DOE Coordinator J.Aellen Contact: Herbert D Easterly
OERI # 6675 DOE Program Off: CE
Category: Transportation Systems, Vehicles & Components
Title: Auxiliary Truck Heater

Inventor: Herbert D Easterly Patent # 4 192 457
State/Country: TN
Company:

Description: A diesel fuel-fired heater used to heat truck engines prior to starting and
also used to heat truck cabs.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 52 Weeks Decision Date: Jul 31, 1985

Received by DOE from NBS: Jul 31, 1985

Status: Analysis

Development Stage: Concept Definition

Summary: Recommendation under consideration by DOE.

=====

DOE # 312 DOE Coordinator P.M.Hayes Contact: Ray L Jones
OERI # 10368 DOE Program Off: CE
Category: Fossil Fuels
Title: The "Jones AWT", a Micro-Computer-Based Automatic Well
Tester for Use of Producing Oil Wells

Inventor: Ray L Jones Patent # 3 911 256
State/Country: CA
Company: Petroleum Automation Systems, Inc

Description: An automatic well tester for in-line automatic measurement of oil, gas and
water produced by an oil well.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 43 Weeks Decision Date: Sep 17, 1985

Received by DOE from NBS: Aug 9, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Received preliminary proposal; it is under study.

=====

DOE # 313 DOE Coordinator P.M.Hayes Contact: Frank J Madison II

OERI # 1D425 DOE Program Off: CE

Category: Fossil Fuels

Title: Process Controller for Stripper Oil Well Pumping Units

Inventor: Frank J Madison II

State/Country: PA

Company: Madison Engineering

Description: A programmable microprocessor control system that determines the optimum pumping speed of a beam oil well pump by comparing the wave form of current flow during each pumping cycle to a wave form stored in memory. Based on the results of the comparison, the controller either modifies the pumping speed or shuts the pump off for a given period of time. The device is primarily intended for stripper wells.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 39 Weeks Decision Date: Aug 13, 1985

Received by DOE from NBS: Aug 13, 1985

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

=====

DOE # 314 DOE Coordinator D.G.Mello Contact: Max Klein

OERI # 1D734 DOE Program Off: CE

Category: Industrial Processes

Title: Filter Apparatus

Inventor: Max Klein

Patent # 4 394 146

State/Country: MA

Company:

Description: An air filtration system wherein a long filter mat is drawn in a zig-zag path across an air flow path to give multiple filtration passages of the air through the filter mat. The mat is continuously drawn from a large roll such that fresh filter surface is continuously fed through the filter chamber. The used mat is discarded.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 15 Weeks Decision Date: Aug 30, 1985

Received by DOE from NBS: Aug 30, 1985

Status: Analysis

Development Stage: Limited Production/Marketing

Summary: Recommendation under consideration by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 315 DOE Coordinator J.Aellen Contact: Ralph A Messing

OERI # 10446 DOE Program Off: CE

Category: Fossil Fuels

Title: Method of Processing Biodegradable Organic Material

Inventor: Ralph A Messing

Patent Applied For

State/Country: NY

Company: Biodynamic Systems, Inc

Description: A high rate continuous biodegrading reactor using immobilized microbes for producing natural gas from a high load waste system.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 34 Weeks Decision Date: Aug 30, 1985

Received by DOE from NBS: Aug 30, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

=====

DOE # 316 DOE Coordinator P.M.Hayes Contact: Ray E Snyder

OERI # 10649 DOE Program Off: CE

Category: Industrial Processes

Title: Thrust Impact Rock Splitter

Inventor: George B Clark

Patent # 4 072 353

State/Country: MO

Company: University of Missouri

Description: A rock splitting device in which two or more splitting segments are positioned in a hole in the rock, and the segments are moved outward by a wedge driven by an impact force superimposed on a constant force.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 22 Weeks Decision Date: Aug 30, 1985

Received by DOE from NBS: Aug 30, 1985

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 317 DOE Coordinator J.Aellen Contact: Bernard L Sater

OERI # 46D2 DOE Program Off: CE

Category: Direct Solar

Title: Edge-Illuminated Multi-Junction (VMJ) Solar Cell

Inventor: Bernard L Sater

Patent Applied For

State/Country: OH

Company:

Description: An edge illuminated vertical multijunction photovoltaic cell to be operated with concentrators from about 200 to 1000 suns.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 42 Weeks Decision Date: Aug 30, 1985

Received by DOE from NBS: Aug 30, 1985

Status: Analysis

Development Stage: Working Model

Summary: Recommendation under consideration by DOE.

=====

DOE # 318 DOE Coordinator J.Aellen Contact: Louis A Joo

OERI # 1D523 DOE Program Off: CE

Category: Industrial Processes

Title: Bi-Polar Electrode for Hall-Heroult Electrolysis

Inventor: Louis A Joo

Patent # 4 462 889

State/Country: TN

Company: Great Lakes Carbon Corporation

Description: A new design for a bi-polar electrode for Hall-Heroult electrolysis for aluminum production.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Aug 30, 1985

Received by DOE from NBS: Aug 30, 1985

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

=====

DOE # 319 DOE Coordinator J.Aellen Contact: Shao-E Tung

OERI # 10530 DOE Program Off:

Category: Industrial Processes

Title: Removal of Hydrogen Sulfide from a Gas Stream

Inventor: Shao-E Tung

Patent Applied For

State/Country: MA

Company:

Description: A non-reactive adsorption/regeneration process for removing hydrogen sulfide from a gas stream.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Sep 23, 1985

Received by DOE from NBS: Sep 23, 1985

Status: Analysis

Development Stage: Engineering Design

Summary: Recommendation under consideration by DOE.

=====

DOE # 320 DOE Coordinator J.Aellen Contact: Shang-I Cheng

OERI # 10638 DOE Program Off:

Category: Fossil Fuels

Title: Coal Gasification with Carbon Dioxide and Lime Recycling

Inventor: Shang-I Cheng

Patent # 4 448 588 & Others

State/Country: NJ

Company:

Description: A coal gasification process that uses air instead of oxygen to produce a nitrogen free 400 BTU per cubic foot gas by use of re-cycled carbon dioxide and lime.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 17 Weeks Decision Date: Sep 23, 1985

Received by DOE from NBS: Sep 23, 1985

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

Inventions Recommended for DOE Consideration by NBS/ OERI - A Brief Status Report

=====

DOE # 321 DOE Coordinator G.K.Ellis Contact: Philip H Gifford II
OERI # 10279 DOE Program Off:
Category: Fossil Fuels
Title: Process for Recovery of Oil from Oil Shale Simultaneously
Producing Hydrogen
Inventor: Philip H Gifford II Patent # 4 D01 105 & Others
State/Country: CO
Company:
Description: A shale oil recovery process that also gasifies coke in the spent shale to
produce hydrogen and carbon dioxide in a water gas shift reaction.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 60 Weeks Decision Date: Sep 23, 1985
Received by DOE from NBS: Sep 23, 1985
Status: Analysis
Development Stage: Laboratory Test
Summary: Recommendation under consideration by DOE.

=====

DOE # 322 DOE Coordinator D.G.Mello Contact: Maurice W Lee, Junior
OERI # 10139 DOE Program Off: CE
Category: Miscellaneous
Title: Electrical Resistance Cooking Apparatus with Automatic
Circuit Control
Inventor: Maurice W Lee, Junior Patent Applied For
State/Country: OK
Company: Smokarama, Inc
Description: A method of using high frequency energy to cook meat for fast food vendors.
The key feature is the lack of need for a vent.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 65 Weeks Decision Date: Sep 30, 1984
Received by DOE from NBS: Sep 30, 1984
Status: Analysis
Development Stage: Limited Production/Marketing
Summary: Recommendation under consideration by DOE.

=====

DOE # 323 DOE Coordinator G.K.Ellis Contact: David M Wilder

OERI # 1D613 DOE Program Off: CE

Category: Industrial Processes

Title: Rolling Mill for Reduction of Moisture Content in Waste Material

Inventor: David M Wilder

Patent # 4 436 028

State/Country: OR

Company:

Description: A drive to remove mechanically some of the water from wood waste fuel. The previously pulverized wood is passed between two rollers and water is pressed from the wood.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Sep 30, 1985

Received by DOE from NBS: Sep 30, 1985

Status: Analysis

Development Stage: Prototype Test

Summary: Recommendation under consideration by DOE.

=====

DOE # 324 DOE Coordinator J.Aellen Contact: Ray E Snyder

OERI # 1D684 DOE Program Off: CE

Category: Industrial Processes

Title: Method and Composition for Enhancement of Mycorrhizal Development by Foliar Fertilization

Inventor: Gene S Cox

State/Country: MO

Company: University of Missouri at Columbia

Description: A method for increasing plant growth by means of a foliar fertilization process intended to increase the infection of plant roots by mycorrhizal fungi, thus increasing their uptake of water and nutrients from the soil.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 26 Weeks Decision Date: Sep 30, 1985

Received by DOE from NBS: Sep 30, 1985

Status: Analysis

Development Stage: Concept Development

Summary: Recommendation under consideration by DOE.

Inventions Recommended for DOE Consideration by NBS' OERI - A Brief Status Report

DOE # 325 DOE Coordinator P.M.Hayes Contact: Forrest M Palmer

OERI # 9934 DOE Program Off: CE

Category: Industrial Processes

Title: Low Cost, Low Energy Machine and Method for Continuous
Casting Non-Ferrous Strip and Composites

Inventor: Forrest M Palmer

Patent Applied For

State/Country: MI

Company:

Description: A process for continuous casting of non-ferrous and composite materials into
thin strips.

Significant Dates, Status and Summary of Developments:

Time in NBS Processing: 57 Weeks Decision Date: Sep 30, 1985

Received by DOE from NBS: Sep 30, 1985

Status: Analysis

Development Stage: Laboratory Test

Summary: Recommendation under consideration by DOE.

A P P E N D I X A

INVENTIONS LISTED

BY

INVENTION CLASS

TECHNICAL CATEGORIES

- 1.00 Fuels and Lubricants acquisition, production, distribution
- 1.01 Geophysical prospecting
- 1.1 Fossil Fuels
 - 1.11 Coal Mining and Mining Methods
 - 1.111 Coal Liquification
 - 1.112 Coal Gasification
 - 1.113 Greater Resource Recovery-Methods
 - 1.114 Greater Resource Recovery-Equipment
 - 1.12 Oil Wells and Oil Pipelines
 - 1.121 Greater Resource Recovery-Methods
 - 1.122 Greater Resource Recovery-Equipment
 - 1.13 Oil Shale
 - 1.131 Tar Sands
 - 1.14 Natural Gas and Gas Pipelines
 - 1.141 Chemical Conversion of Gas to Liquids
- 1.2 Alternate Fuels
 - 1.201 Miscellaneous not included below
 - 1.21 Propane
 - 1.22 Methane
 - 1.23 Hydrogen
 - 1.24 Alcohols (Fermentation Processes)
 - 1.25 Hybrid
 - 1.26 Fuel Cells
 - 1.27 Fuel Additives
 - 1.28 Bioengineering-Biomass
 - 1.29 Miscellaneous Synthetic Processes
- 1.30 Greases and Lubricants
- 1.4 Refined Petroleum Products
- 2.00 Energy Conversion from Natural Sources
 - 2.1 Solar Collectors
 - 2.10 Concentrator Designs
 - 2.101 Photovoltaic Devices only-does not include power generation (see 2.1)
 - 2.11 Solar to Direct Mechanical Energy
 - 2.12 Solar Electric Power Generating Systems
 - 2.13 Photovoltaic Power Generation Devices
 - 2.2 Geothermal
 - 2.21 Electrical Power Generation
 - 2.3 Ocean Thermal
 - 2.4 Wind
 - 2.41 Wind Driven Motors & Components Thereof
 - 2.42 Processes Using Energy from Wind
 - 2.43 Electrical Power Generating by Wind Energy
 - 2.5 Water Power Processes (Inland)
 - 2.51 Electrical Power Generation by Water Power (Inland)
 - 2.6 Ocean Water Power
 - 2.61 Wave Power Systems
 - 2.62 Tidal Power Systems
 - 2.63 Ocean Current Power Systems
 - 2.7 Atmospheric Pressure

- 3.00 Energy Conversion from Secondary Sources (No EC Equivalent)
- 3.1 Combustion Engines and Components Thereof
 - 3.11 Reciprocal
 - 3.12 Rotary
 - 3.13 Turbine
 - 3.14 Fuel Systems
 - 3.141 Carburetors and Modifications Thereof
 - 3.142 Fuel Injectors
 - 3.143 Water Injectors
 - 3.144 Multi-Fuel Mixers
 - 3.145 Air and Oxygen Injection
 - 3.146 Combustion Analyzers
 - 3.15 Ignition Systems
- 3.2 Steam Engines and Turbines
- 3.3 Air Compressors and Motors
- 3.4 Hydraulic Pumps and Motors
- 3.5 Electric Motors and Generators (Utilities)
- 3.51 Miscellaneous Electric Power Generating Systems
- 3.6 Chemical
 - 3.61 Photochemical
- 3.7 Mechanical
- 3.8 Heat Pumps
- 3.9 Highway Power Generators
- 4.00 Energy Generation Storage and Distribution
 - 4.1 Electrical Transmission
 - 4.11 Storage (batteries)
 - 4.12 Distribution (Transformers, Switchgears, Controls)
 - 4.2 Mechanical (Flywheels)
 - 4.3 Thermal
 - 4.4 Pneumatic (Compressed Air and Gas)
 - 4.5 Hydraulic (Water, Pumped Storage, etc.)
 - 4.6 Miscellaneous Power Generation, Storage and Transmission
- 5.00 Transportation
 - 5.1 Air
 - 5.2 Water
 - 5.3 Rail
 - 5.4 Highway Vehicles and Systems
 - 5.41 Highways, Streets and Traffic Control
 - 5.42 Vehicular Power Systems
 - 5.421 Combustion Engine Vehicles
 - 5.422 Electric Vehicles
 - 5.423 Steam Vehicles
 - 5.424 Hybrid Vehicles
 - 5.43 Vehicular components (Except engines or Fuel Systems) for which see 3.00+)
 - 5.431 Transmissions
 - 5.432 Braking Systems (Regenerative Braking, etc.)
 - 5.433 Wheels and Tires
 - 5.434 Suspensions
 - 5.435 Body and Chassis Design
 - 5.436 Lubrication Systems
 - 5.437 Driver and Fuel Economy Control Systems
 - 5.438 Air Conditioning

- 6.00 Buildings, Structures and Components
 - 6.1 Design, Construction and Construction Practices
 - 6.2 Heating, Cooling and Ventilating
 - 6.201 Instruments and Controls
 - 6.21 Fireplaces
 - 6.22 Solar Heaters
 - 6.221 Heat Storage Per Solar
 - 6.23 Boilers and Furnaces
 - 6.231 Flue Heat Recovery
 - 6.232 Air and Oxygen Inductors and Injectors
 - 6.233 Flue Vent Control
 - 6.234 Oil Burners
 - 6.235 Stokers
 - 6.236 Combustion Controls, Combustion Equipments, Combustion Chemical
 - 6.237 Coal-Oil-Water Mixtures, etc.
 - 6.24 Electric Heat
 - 6.25 Heat Pumps
 - 6.26 Air Conditioning
 - 6.27 Ventilating Systems
 - 6.28 Humidification Systems
 - 6.29 Solar Air Conditioning
 - 6.3 Hot Water Supply
 - 6.31 Heating Systems
 - 6.311 Solar Heaters
 - 6.32 Hot Water Conservation Devices and Practices
 - 6.4 Insulation and Insulating Practices
 - 6.5 Electrical Wiring and Fixtures
 - 6.6 Plumbing and Fixtures (Sewage and Sanitation)
- 7.00 Industrial Processes
 - 7.01 Chemical, Chemical Process Industries Unit Operations
 - 7.02 Textiles, Fabrics, Rugs, Clothing
 - 7.03 Food, Feeds, Leather, Furs, Feathers, etc.
 - 7.04 Lumber, Wood, Wood Products
 - 7.05 Paper and Allied Products
 - 7.06 Petroleum, Oil, and Natural Gas Industries
 - 7.07 Rubber and Plastics
 - 7.08 Stone, Clay, Glass
 - 7.09 Primary Metals
 - 7.010 Steel Rolling and Finishing
 - 7.011 Iron and Steel Foundries
 - 7.012 Primary Non-ferrous Metals
 - 7.013 Fabricated Metal Products
 - 7.014 Air Separation
 - 7.015 Water and Waste Treatment
 - 7.016 Packaging and Containers
 - 7.017 Miscellaneous - Desalinization - Electrolysis
 - 7.018 Solar Distillation Processes
 - 7.019 Solar Evaporation Processes
 - 7.020 Other Solar Industrial
- 7.1 Civil Engineering
- 7.2 Agriculture Equipment and Farm Equipment
- 7.3 Oil Spill Recovery
- 7.4 Mechanical Contrivances (non-vehicular)

- 8.00 Consumer Products and Practices
 - 8.1 Consumer Education and Behavior
 - 8.2 Appliances
 - 8.3 Tools
 - 8.4 Lamps and Light Bulbs (6.5 for lighting fixtures)
- 9.00 Miscellaneous
 - 9.1 Not Energy-Related
 - 9.2 Nuclear
 - 9.3 Perpetual Motion
 - 9.4 Uninterpretable
 - 9.5 Instrumentation
 - 9.51 Electrical Demand, Overload or Consumption Indicators
 - 9.6 Computer - Data Storage and Retrieval
 - 9.7 Communication Systems and Equipment
 - 9.8 Printing Systems and Equipment

Class	Doe-Num	Contact Name	Short Title
1.00000	32	John C Calhoun, President	Wood Gas Reactor
1.00000	161	Anthony A duPont	duPont Connell Energy Coal Gasification Process
1.01000	210	Lloyd Flatland	Ultra High Speed Drilling Device
1.11000	86	Howard Bovars	Coke Desulfurization
1.11000	91	Rees Kinney, Atty.	Mine Brattice
1.11000	111	John C. Haspert	Haspert Mining System
1.11000	112	Paul Zanoni	Pump
1.11000	155	James M Cleary	Slip Mining
1.11000	188	John C Haspert	Remote Controlled Underground Mining System
1.11000	223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ
1.11200	320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling
1.11300	268	Robert L Moody	Apparatus for Enhancing Chemical Reactions
1.12000	29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms
1.12000	39	James H Lawler	Lawler Steam Generator
1.12000	55	Richard D Palone	Electrically Heated Sucker-Rod
1.12000	79	Marvin L Wahrman	Oil Well Bit Insert
1.12000	127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands
1.12000	128	J D Seader	Continuous Distillation Apparatus and Method
1.12000	143	Amar Amancharla	Oil Well Pump Jack

Class	Doe-Num	Contact Name	Short Title
1.12000	146	Ronald M Hertzfeld	Line Integral Method of Magneto-Electric Exploration
1.12000	154	Forrest E Chancellor	Rotating Horsehead for Pumping Units
1.12000	159	William D Gramling	Non-Tubing Type Gas Powered Lift Device
1.12000	166	Robert F Evans	Borehole Angle Control
1.12000	186	Ronald Hertzfeld	Oil Recovery by In-Situ Exfoliation Drive
1.12000	211	Robert F Evans	Shock Mounted Stratapax Bit
1.12000	217	Jeff Landua	Jointless Tape for Oil Well Pumps
1.12000	241	Richard J Gay	Polysulfide Oil Field Corrosion Control System
1.12000	245	Daniel M Busby	Improved Oil Well Pumping Unit
1.12000	249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells
1.12000	280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination
1.12000	293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings
1.12000	300	John Patton	Casing Stabbing Apparatus
1.12000	312	Ray L Jones	The "Jones AWT"
1.12000	313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units
1.13000	321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale
1.14000	88	Lawrence Ladin	System-100

Class	Doe-Num	Contact Name	Short Title
1.14000	208	Norman C Fawley, President	Fuel Transport Modules
1.14000	231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions
1.20000	23	James E Luber	Microgas Dispersions
1.20000	40	Roland P Soule	Blue Water Gas
1.23000	3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin
1.23000	165	Wu-Chi Chen	Process for Recovering Hydrogen from H ₂ S
1.26000	276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy
1.28000	235	Harry Curtin	Single Stage Anaerobic Digestion Process
1.28000	315	Ralph A Messing	Method of Processing Biodegradable Organic Material
2.00000	17	David W. Doyle, V.P.	Osmotic-Hydro Power Generation
2.00000	78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources
2.10000	4	Joseph C Yater	Power Conversion of Energy Fluctuations
2.10000	11	Ronald H Smith	Solar Collector
2.10000	35	Gulab Chand Jain	Solar Pond System
2.10000	41	William F Armitage Jr	Photovoltaic Device by Solid Phase Growth
2.10000	74	G. R. Fitterer, President	Fuel Cell
2.10000	100	Michael F Zinn	Solaroil
2.10000	117	George E Mattson	"Solarspan" Prism Trap
2.10000	121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction

Class	Doe-Num	Contact Name	Short Title
2.10000	124	Charlton Sadler	Solar Collector
2.10000	135	M Hossein Khorsand	Point Focus Parabolic Solar Collector
2.10000	145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides
2.10000	177	Robert John Starr	The Solar I Option
2.10000	179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic, Solar Systems
2.10000	180	Richard E Dame	Adjustable Solar Concentrator (ASC)
2.10000	222	Donald R Thomas	Louver Trombe Solar Storage Unit
2.10000	234	Douglas E Wood	Geodesic Solar Paraboloid
2.10000	278	James M Stewart	Complete System for Large Solar Water Heating and Storage
2.10000	292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells
2.10000	317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell
2.20000	182	Robert F Evans	Improved Seal for Geothermal Drill Bit
2.40000	14	Daniel J Schneider	Aerodynamic Lift Translator
2.40000	67	James A Browning	Hydraulic Power for Windmills
2.40000	95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine
2.40000	110	Karl H. Bergey	Improved Windpower Generating System
2.50000	197	Robert F Karlicek	Frequency Regulator

Class	Doe-Num	Contact Name	Short Title
2.80000	43	Sidney A Parker	Thermal Gradient Utilization Cycle
3.00000	9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols
3.00000	37	Lawrence E Bissell	Hotwater Engine
3.00000	62	Thaddeus Papis	Tapered Plate Annular Matrix
3.00000	77	James W McCord	Variable Heat Refrigeration System
3.00000	273	Julius Czaja	Open Cycle Latent Heat Engine
3.10000	48	Werner E Howald	Howald Combustor
3.11000	5	George C Austin	Diesel Engine Conversion System
3.11000	54	Edward Perry Sikes, Jr.	Optimizer
3.11000	101	Sharad M Dave	Controlled Combustion Engine
3.11000	122	Michael D Leshner	Lean Limit Controller
3.11000	131	N. John Beck	Valve Deactuator for Internal Combustion Engines
3.11000	229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism
3.13000	31	Richard E Engdahl	Ceramic Rotors and Vanes
3.13000	59	Bernard Zimmern	Volumetric Gas Turbine
3.14000	6	Albert B Csonka	Micro-Carburetor
3.14000	69	Enoch J Durbin	Ionic Fuel Control
3.14000	250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil
3.14100	50	Robert Cameron	Scotsman Fuel Energizer
3.14100	184	Nathan Gold	Coasting Fuel Shutoff
3.20000	96	Floyd R Anderson	Leavell, Pneumatic Precussion Tools and Systems

Class	Doe-Num	Contact Name	Short Title
3.20000	236	Ronald E Brandon	Steam Turbine Packing Ring
3.30000	70	Kenneth A Stofen	Compressor Heat-Recovery System
3.40000	189	Gerald Eastman	Pump Jack
3.40000	262	Kai-Chih Chang	Energy Saving Pump and Pumping System
3.40000	275	Don E Avery	Low Head - High Volume Pump
3.40000	301	Don E Avery	Pump Control System for Windmills
3.50000	60	William H Cone	Electric Transport Refrigerator
3.50000	106	James L Ramer	Deep Shaft Hydro-Electric Power
3.50000	187	Lewis W Parker	Variable Field Induction Motor
3.50000	206	Jonathan Gabel	Electromechanical Energy Conversion Devices
3.50000	216	Richard F Kiley	Semiconductor Element Mounting
3.60000	219	Thomas M Meshbeshier	Method for Making Acetaldehyde from Ethanol
3.80000	44	Leon Lazare	New Working Fluids for Absorption Heat-Pump
4.00000	227	Norman C Fawley	CRM Pipe
4.00000	271	William B Retallick	Hydrogen Storage System
4.11000	195	Howard L Barrett	Proportional Current Battery
4.12000	136	Albert S Richardson, Jr.	Windamper
4.12000	139	Louis L Marton	Transformer With Heat Dissipator
4.12000	158	Paul F Pugh	Energy Conservative Electric Cable System

Class	Doe-Num	Contact Name	Short Title
4.12000	247	Nathan Cohn	Improved Control of Bulk Power Transfers
4.30000	26	Seymour Jarmul	Compact Energy Reservoir
4.30000	252	William C Whitman	Thermal Bank
5.10000	194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft
5.10000	228	Meredith C Gourdine	EGD Fog Dispersal System
5.10000	246	Juan M Garcia, Junior	Maximum Cruise Performance
5.10000	307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuselages
5.20000	204	Raymond P Holland Jr	The Induction Propeller
5.20000	287	Don J Marshall	Automatic Variable Pitch Marine Propeller
5.30000	147	A. D. Barrett, VP	Railroad Switch Heater
5.30000	285	Hermann Ernst	Ring Seals for Railroad Axle Bearings
5.40000	99	Robert Gordon, President	Light Weight Composite Trailer Tubes
5.40000	214	Donald E Wise	Convertible Flat/Drop Trailer
5.42000	58	Charles M Kirk	A Multiple Spark System Using Inductive Storage
5.42100	13	Ranendra K Bose	Anti-Pollution System
5.43000	133	James V Enright	AUTOTHERM Car Comfort System
5.43000	152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System
5.43000	193	Nicholas Archer Sanders	Engine Heating Device
5.43000	201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System
5.43000	237	David E Hicks	Hicks Alter-Brake System

Class	Doe-Num	Contact Name	Short Title
5.43000	303	Nicholas Archer Sanders	Battery Heating Device
5.43000	311	Herbert D Easterly	Auxiliary Truck Heater
5.43100	8	Fred Tunmore	Inertial Storage Transmission
5.43100	141	Samuel Shiber	New Hydrostatic Transmission
5.43200	164	John D Gill	Elastomer Energy Recovery Elements
5.43200	244	Brad L Pfeifley	CHARLIE
5.43300	114	Mario Bruno	New Energy-Saving Tire for Motor Vehicles
5.43500	52	Sherman R Jenney	Air Wedge
5.43800	225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System
6.10000	51	Richard B Bentley	Thermal Efficiency Construction
6.10000	73	Melvin H Sachs	INTECH
6.10000	83	Charles James Bier	Vertical Solar Louvers
6.10000	283	Mark A Smith	Aluminum Roofing Chips
6.10000	289	Marc S Caspe	An Earthquake Barrier
6.20000	36	Richard P Gingras	Computerstat
6.20000	68	Charlie Baziel	Helical Screw Compressor
6.20000	92	John L Carroll	Tri-Water
6.20000	163	Dennis D Howard	Thermotropic Plastic Films
6.20000	174	Gene Plattner	Skate on Plastic Ice Skating System
6.20000	191	William Lake	Rotary Heat Pump Air Conditioner
6.20000	221	John Griffin	Strainercycle
6.20100	2	Rita Paleschuck	Fuel Miser

Class	Doe-Num	Contact Name	Short Title
6.20100	33	Joseph B Vogt	Temperature Indicating Device
6.20100	149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)
6.20100	226	Stewart Ryan	An Electronic Leak Detecting System
6.20100	291	Jerry Tartaglino	Selective Zone Isolation for HVAC System
6.23000	53	Harry E Wood	High-Efficiency Water Heater
6.23000	57	Robert H Wieken	X-5 Smoke Eliminator
6.23000	130	Arnold R Post	Furnace Input Capacity Trimming Switch
6.23000	176	Dale Flickinger	Self-Contained Portable Solid Fuel Furnaces
6.23000	199	John Hunter	Rotary Coal Combustor and Heat Exchangers
6.23000	266	Dan Egosi	Energy Conversion Method
6.23100	27	R J Jones	Waste Heat Utilization, Commercial Cooking
6.23100	42	Everett Millard	Flue Baffle Assembly
6.23200	22	Herbert G Lehmann	Fuel Burner Attachment
6.23400	102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners
6.23400	125	Frank W Bailey	The Turbulator Burner System
6.23600	288	Norman L Dickinson	DIPAC and MODIPAC
6.23700	286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM
6.24000	34	Ron Davies	Delphic Thermogenic Paint

Class	Doe-Num	Contact Name	Short Title
6.25000	230	Donald C Erickson	Absorption Heat Pump
6.25000	253	Anthony Peters	High Performance Heat Pump
6.26000	160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle
6.26000	269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus
6.26000	272	Robert M Roeglin	V-Plus System
6.26000	281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator
6.26000	284	Anthony N Fresco	Atomized Oil-Injected Rotary Screw Compressors
6.26000	290	Jerry Aleksandrow	Low Energy Ice Making Apparatus
6.26000	298	David L Swartz	Three/Tenths Degree Kelvin Closed Cycle Refrigeration System
6.27000	144	Robert C Saunders, Jr.	SpaCirc Space Circulation Fan
6.30000	168	Spencer Kim Haws	The Hot Water Saver
6.32000	28	Gilbert W Didion	Ultraflo
6.32000	49	Wayne S Boals	Automatic Control System for Water Heaters
6.32000	296	Raymond Hunter	Shower Bath Economizer
6.40000	15	James L Bullock	Estacron
6.40000	19	Clair H Reinbergen, Pres.	Rigid Board Insulation
6.40000	20	Thomas P Hopper	Thermal Shade
6.40000	85	Charles G Kalt	Dielectric Windowshade
6.40000	129	James E Kessler	Super U System - Snap Strap
6.40000	134	John C Rupert	Expanded Polystyrene Bead Insulation System

Class	Doe-Num	Contact Name	Short Title
6.40000	151	Yao Tzu Li	Film Type Storm Window
6.40000	173	Bill Burley	Thermal Ice Cap
6.40000	185	Charles Bach	Insulated Garage Door
6.40000	209	John W Yount	Reclaiming Process for Resin Treated Fiberglass
6.40000	282	Eugene Tippmann	Insulated Siding
6.50000	12	Thomas J Russo	High Frequency Energy Saving Device
6.50000	63	Thomas LoGiudice	Fluorobulb
6.50000	71	Arleigh Wangler	Knight Guard
6.50000	103	Edwin E Eckberg	Low Voltage Ionic Fluorescent Light Bulb
6.50000	138	Bernard Joseph Margowsky	Phantom Tube
6.50000	297	E M Talbott	Series (Two-Wire) V-Controller
6.60000	212	Hugh Huislander	Water Warden
7.00000	10	Harrison Robert Woolworth	Scrap Metal Preheating
7.00000	16	John W Bruce	Vacuum Drying
7.00000	18	G R Fitterer	Control of Low Carbon Aluminum Steels
7.00000	21	Robert S Norris	Waste Oil Utilization System
7.00000	24	Drew W Morris	Can and Bottle Crushing Apparatus
7.00000	25	Donald C Erickson	Sulfur Removal From Producer Gas
7.00000	30	Ken Walmer	Removing Sulfur Dioxide From Flue Gases
7.00000	38	John McCallum	Reduction Volatilizations
7.00000	45	Joe W Fowler	Bulk Cure Tobacco Barn
7.00000	46	David J Secunda	Thexon Dehydration

Class	Doe-Num	Contact Name	Short Title
7.00000	47	Robert M Arthur	Wastewater Aeration Power Control Device
7.00000	56	Jay Dornier	Flexaflo-The Wet Fuel Dryer
7.00000	61	Murry S. Laskey	Fuel Preparation Process
7.00000	64	Lester Hendrickson	Mahalla Process
7.00000	66	Daniel Ben-Shmuel	Heat Extractor
7.00000	72	Basil W Balls	Petro-Plant Waste Gas Boiler
7.00000	75	Richard Jablin	Coke Quenching
7.00000	76	Donald R Ross	The Ross Furnace
7.00000	80	Patsie C Campana	Improved Unfired Refractory Brick
7.00000	81	C Richard Panico	Flash Polymerization
7.00000	84	Kenneth W Odil	Kinetic Energy Type Pumping System
7.00000	87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ
7.00000	89	Henry E. Allen	Continuous Casting Process and Apparatus
7.00000	93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions
7.00000	94	William M FioRito	Lantz Converter
7.00000	97	James W McCord	Water Drying System
7.00000	98	James L. Chill, President	Process Development to Conserve Energy and Material Bearings
7.00000	105	Allen D Zumbrunnen	High Frequency Furnace
7.00000	107	Ping-Wha Lin	Waste Products Reclamation Process
7.00000	108	Paul J Cromwell	Processing Recovery of Aluminum

Class	Doe-Num	Contact Name	Short Title
7.00000	113	Henry J Wallace	Wallace Mold Additive System
7.00000	116	Roy J Weikert	Model 5000 ASEPAK System
7.00000	118	Roderick L Smith	Energy Adaptive Control of Precision Grinding
7.00000	119	Otis W Smith	Air Ratio Controller (AERTROL)
7.00000	123	J. Paul Pemsler, President	Comminution of Ores by a Low-Energy Process
7.00000	126	Karl D Scheffer	Vaclaim
7.00000	132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material
7.00000	137	H Roy Weber	A Portable Pollution Free Automobile Incinerator
7.00000	142	Anatol Michelson	Process for Heatless Production of Hollow Items
7.00000	148	Thomas F Rogers	Reclamation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes
7.00000	150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement
7.00000	156	James J Dolan	Direct-Current Electrical Heat-Treatment.
7.00000	157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.
7.00000	162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline
7.00000	167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids

Class	Doe-Num	Contact Name	Short Title
7.00000	172	Edward A Griswold	GEM Electrostatic Filtration System
7.00000	175	W W Seward	A Low-Energy Carpet Backing System
7.00000	178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material
7.00000	183	E. Stephen Miliaras	Increased Vapor Generator Feature
7.00000	198	Robert H Nealy	The Thermatreat System
7.00000	200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas
7.00000	205	Charles B James	Energy Efficient Arc Welding System
7.00000	207	Frank L Anderson	Glass Sheet Manufacturing Method
7.00000	213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe
7.00000	215	Richard Jablin	Slag Waste Heat Boiler
7.00000	218	Wilford Dean Tannehill	Behemoth
7.00000	220	Charles A Schwartz	Deep Throat Resistance Welder
7.00000	232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin
7.00000	239	Jack Winnick	Desulfurizing Gas Mixtures
7.00000	242	Donald Shuler	New Petersburg Beam Trawl
7.00000	243	Garry R Kenny	Aluminum Rich Concentrate from Municipal Waste
7.00000	251	Victor R Thayer (Dec'd)	Low Energy Distillation Process
7.00000	254	Girn Metal Products, Inc	"Turbo-Glo" Immersion Furnace

Class	Doe-Num	Contact Name	Short Title
7.00000	255	Arthur F Stone	Method and Apparatus for Scrubbing Gas
7.00000	258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool
7.00000	259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe
7.00000	260	Edward S Kress, President	Method and Apparatus for Handling and Dry Quenching Coke
7.00000	261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete
7.00000	264	Donald F Othmer	Desulfurization of Coal
7.00000	267	Shang-I Cheng	Gasification of Coal and Solid Wastes
7.00000	270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment
7.00000	295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance
7.00000	299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column
7.00000	308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process
7.00000	309	Robert C LeMay	Process of Smelting with Submerged Burner
7.00000	310	Robert M Hunter	Portable Wastewater Flow Metering Device
7.00000	314	Max Klein	Filter Apparatus
7.00000	316	Ray E Snyder	Thrust Impact Rock Splitter
7.00000	318	Louis A Joo	Bi-Polar Electrode for Hall-Heroult Electrolysis

Class	Doe-Num	Contact Name	Short Title
7.00000	319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream
7.00000	323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material
7.00000	325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting
7.01700	305	Max McElmurry	Automatic Filter Network Protection
7.10000	203	Morris R Jeppson	Microwave Methods and Apparatus for Paving
7.10000	294	Carl L Sterner	Highway Power Patcher
7.20000	82	Robert L Ullrich	Cool Air Induction
7.20000	90	Clinton Van Winkle	Grain Dryer
7.20000	140	Tony Wilhelm	Counter Flow Dual Tube Heat Exchanger
7.20000	169	B O Combs	MIRAFOUNT
7.20000	170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture
7.20000	171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration
7.20000	196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm
7.20000	224	Gwyer Grimminger, Presiden	Haile Alternate Fuel Grain Dryer
7.20000	233	Daniel A Lockie	Mounted Steerable Ripper
7.20000	248	Thorvald G Granryd	Dyna-Bite Traction Intensifier
7.20000	265	John W Richardson	Liquid Treatment for Growing Vegetation
7.20000	279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops

Class	Doe-Num	Contact Name	Short Title
7.20000	324	Ray E Snyder	Foliar Fertilization Process
7.40000	263	William Tunderman	Method for Reconditioning Rivetless Chain Links
7.40000	277	Guy C Dempsey	Electronic Conveyor Control Apparatus
7.40000	302	John H Burk	Rock Impact Breakers
8.10000	1	Murray G Lowenthal	Demand Metering System for Electric Energy
8.10000	306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings
8.20000	7	Len Spelber	Hydraulically Powered Waste Disposal Device
8.20000	120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle
8.20000	153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods
8.20000	192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer
8.20000	238	Harry E Wood	Clothes Dryer Automatic Shut-Off
8.20000	240	Uwe H Butenhoff	All Steam Heated Sادiron for Commercial Use
8.20000	322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control
8.40000	274	Nathan E Passman	Flexible Lighting
9.00000	104	Eskil L Karlson	Low Continuous Energy Mass Separation System
9.00000	109	H. W. Kennick	Hydrostatic Meat Tenderizer
9.00000	115	Clyde G Phillips	Refrigeration System

Class	Doe-Num	Contact Name	Short Title
9.00000	181	Eskil L Karlson	The Karlson Ozone Sterilizer
9.00000	190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method
9.00000	202	Yao Tzu Li	Wobbling Type Distillation Apparatus
9.00000	256	Evert S Green	Plant Irrigation Method
9.00000	257	Richard H Baasch	Method and Apparatus for Melting Snow
9.00000	304	Deborah D Chung	Exfoliated Graphite Fibers
9.51000	65	Lee A Henningsen	Watt Vendor

A P P E N D I X B

INVENTIONS LISTED ALPHABETICALLY

BY

INVENTOR'S NAME

Inventor Name Key	Doe-Num	Contact Name	Short Title
ACKLEYIII JOH W	306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings
ACRES DEN M	175	W W Seward	A Low-Energy Carpet Backing System
AGAR JOE	72	Basil W Balls	Petro-Plant Waste Gas Boiler
ALEKSANDR JER	290	Jerry Aleksandrow	Low Energy Ice Making Apparatus
ALLEN HEN E	89	Henry E. Allen	Continuous Casting Process and Apparatus
ANDERSON FLO R	96	Floyd R Anderson	Leavell, Pneumatic Precussion Tools and Systems
ANDERSON FRA L	207	Frank L Anderson	Glass Sheet Manufacturing Method
ARMITAGE WIL F	41	William F Armitage Jr	Photovoltaic Device by Solid Phase Growth
ARTHUR ROB M	47	Robert M Arthur	Wastewater Aeration Power Control Device
ASHER ELD L	119	Otis W Smith	Air Ratio Controller (AERTROL)
ATTERBURY TOM	283	Mark A Smith	Aluminum Roofing Chips
AUSTIN GEO C	5	George C Austin	Diesel Engine Conversion System
AVERY DON E	275	Don E Avery	Low Head - High Volume Pump
AVERY DON E	301	Don E Avery	Pump Control System for Windmills
AVERY RIC J	269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus
BAASCH RIC H	257	Richard H Baasch	Method and Apparatus for Melting Snow
BAGBY JAM ALL	91	Rees Kinney, Atty.	Mine Brattice
BAILEY FRA W	125	Frank W Bailey	The Turbulator Burner System

Inventor Name Key	Doe-Num	Contact Name	Short Title
BALL RAN D	293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings
BARRETT EDW L	195	Howard L Barrett	Proportional Current Battery
BEDROSIAN KAR	171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration
BENTLEY RIC B	51	Richard B Bentley	Thermal Efficiency Construction
BERGEY KAR H	110	Karl H. Bergey	Improved Windpower Generating System
BERNHARD FRA C	102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners
BERTOIA VAL O	95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine
BIER CHA JAM	83	Charles James Bier	Vertical Solar Louvers
BISSELL LAW E	37	Lawrence E Bissell	Hotwater Engine
BISSETT LER M	68	Charlie Baziel	Helical Screw Compressor
BOALS WAY S	49	Wayne S Boals	Automatic Control System for Water Heaters
BOSE RAN K	13	Ranendra K Bose	Anti-Pollution System
BOULET WIL P	56	Jay Dornier	Flexaflo-The Wet Fuel Dryer
BOWMAN HAR L	305	Max McElmurry	Automatic Filter Network Protection
BRACEGIRD PAU E	261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete
BRANDON RON E	236	Ronald E Brandon	Steam Turbine Packing Ring
BROWNING JAM A	67	James A Browning	Hydraulic Power for Windmills
BRUCE JOH W	16	John W Bruce	Vacuum Drying

Inventor	Name Key	Doe-Num	Contact Name	Short Title
BURK	JOH H	302	John H Burk	Rock Impact Breakers
BURLEY	BIL	173	Bill Burley	Thermal Ice Cap
CAMERON	ROB	50	Robert Cameron	Scotsman Fuel Energizer
CAMPANA	PAT C	80	Patsie C Campana	Improved Unfired Refractory Brick
CARMAN	VIN E	8	Fred Tunmore	Inertial Storage Transmission
CARROLL	JOH L	92	John L Carroll	Tri-Water
CASPE	MAR S	289	Marc S Caspe	An Earthquake Barrier
CAUGHEY	ROB A	32	John C Calhoun, President	Wood Gas Reactor
CHANCELLO	FOR E	154	Forrest E Chancellor	Rotating Horsehead for Pumping Units
CHANG	KAI CHI	262	Kai-Chih Chang	Energy Saving Pump and Pumping System
CHANG	SHI	270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment
CHEN	WU CHI	165	Wu-Chi Chen	Process for Recovering Hydrogen from H ₂ S
CHENG	SHA	267	Shang-I Cheng	Gasification of Coal and Solid Wastes
CHENG	SHA	320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling
CHILL	JAM L	98	James L. Chill, President	Process Development to Conserve Energy and Material Bearings
CHUNG	DEB D L	304	Deborah D Chung	Exfoliated Graphite Fibers
CLARK	GEO B	316	Ray E Snyder	Thrust Impact Rock Splitter
CLAY	ROB A	143	Amar Amancharla	Oil Well Pump Jack
CLEARY	JAM M	155	James M Cleary	Slip Mining
COHN	NAT	247	Nathan Cohn	Improved Control of Bulk Power Transfers

Inventor Name Key	Doe-Num	Contact Name	Short Title
CONE WIL H	60	William H Cone	Electric Transport Refrigerator
CONNORS EDW B	167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids
COX GEN S	324	Ray E Snyder	Foliar Fertilization Process
CROMWELL PAU J	108	Paul J Cromwell	Processing Recovery of Aluminum
CSONKA ALB B	6	Albert B Csonka	Micro-Carburetor
CZAJA JUL	273	Julius Czaja	Open Cycle Latent Heat Engine
DAME RIC E	180	Richard E Dame	Adjustable Solar Concentrator (ASC)
DAVE SHA M	101	Sharad M Dave	Controlled Combustion Engine
DEMPSEY GUY C	277	Guy C Dempsey	Electronic Conveyor Control Apparatus
DICKINSON NOR L	288	Norman L Dickinson	DIPAC and MODIPAC
DIDION GIL W	28	Gilbert W Didion	Ultraflo
DOELLNER OSC LEO	194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft
DOLAN JAM J	156	James J Dolan	Direct-Current Electrical Heat-Treatment.
DOUENIAS DAN	254	Girn Metal Products, Inc	"Turbo-Glo" Immersion Furnace
DOYLE DAV W	17	David W. Doyle, V.P.	Osmotic-Hydro Power Generation
DUPONT ANT A	161	Anthony A duPont	duPont Connell Energy Coal Gasification Process
DURBIN ENO J	69	Enoch J Durbin	Ionic Fuel Control
DUVAL LEO A	148	Thomas F Rogers	Reclamation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes

Inventor Name Key	Doe-Num	Contact Name	Short Title
EASTERLY HER D	311	Herbert D Easterly	Auxiliary Truck Heater
EASTIN JOH H	196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm
EASTMAN GER	189	Gerald Eastman	Pump Jack
ECKBERG EDW E	103	Edwin E Eckberg	Low Voltage Ionic Fluorescent Light Bulb
EDWARDS CHA E	179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic Solar Systems
EDWARDS THO C	225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System
EGOSI DAN	266	Dan Egosi	Energy Conversion Method
ELLIOTT GUY RB	231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions
ELLIS HAL	34	Ron Davies	Delphic Thermogenic Paint
ERICKSON DON C	3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin
ERICKSON DON C	25	Donald C Erickson	Sulfur Removal From Producer Gas
ERICKSON DON C	230	Donald C Erickson	Absorption Heat Pump
ERNST HER	285	Hermann Ernst	Ring Seals for Railroad Axle Bearings
EVANS ROB F	166	Robert F Evans	Borehole Angle Control
EVANS ROB F	182	Robert F Evans	Improved Seal for Geothermal Drill Bit
EVANS ROB F	211	Robert F Evans	Shock Mounted Stratapax Bit
FAWLEY NOR C	208	Norman C Fawley, President	Fuel Transport Modules
FAWLEY NOR C	227	Norman C Fawley	CRM Pipe
FINNEGAN JOH D	176	Dale Flickinger	Self-Contained Portable Solid Fuel Furnaces

Inventor Name Key	Doe-Num	Contact Name	Short Title
FIORITO WIL M	94	William M FioRito	Lantz Converter
FITTERER G R	18	G R Fitterer	Control of Low Carbon Aluminum Steels
FITTERER G R	74	G. R. Fitterer, President	Fuel Cell
FLATLAND LLO	210	Lloyd Flatland	Ultra High Speed Drilling Device
FOULKE WIL B	61	Murry S. Laskey	Fuel Preparation Process
FOWLER JOE W	45	Joe W Fowler	Bulk Cure Tobacco Barn
FRANCOVIT THO F	292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells
FRESCO ANT N	284	Anthony N Fresco	Atomized Oil-Injected Rotary Screw Compressors
GABEL JON	206	Jonathan Gabel	Electromechanical Energy Conversion Devices
GARCIA JUA M	246	Juan M Garcia, Junior	Maximum Cruise Performance
GAY RIC J	241	Richard J Gay	Polysulfide Oil Field Corrosion Control System
GIFFORD PHI H	321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale
GILL JOH D	164	John D Gill	Elastomer Energy Recovery Elements
GINGRAS RIC P	36	Richard P Gingras	Computerstat
GOLD NAT	184	Nathan Gold	Coasting Fuel Shutoff
GOURDINE MER C	228	Meredith C Gourdine	EGD Fog Dispersal System
GOVEAR LOU E	212	Hugh Huislander	Water Warden
GRAMLING WIL D	159	William D Gramling	Non-Tubing Type Gas Powered Lift Device
GRANRYD THO G	248	Thorvald G Granryd	Dyna-Bite Traction Intensifier
GRAVES WIL	1	Murray G Lowenthal	Demand Metering System for Electric Energy
GREEN EVE S	256	Evert S Green	Plant Irrigation Method

Inventor Name Key	Doe-Num	Contact Name	Short Title
HAILE JAC D	224	Gwyer Grimminger, Presiden	Haile Alternate Fuel Grain Dryer
HAMMOND OGD H	149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)
HASPERT JOH C	111	John C. Haspert	Haspert Mining System
HASPERT JOH C	188	John C Haspert	Remote Controlled Underground Mining System
HASSELMAN WAL J	19	Clair H Reinbergen, Pres.	Rigid Board Insulation
HAUSKNECH LOU A	201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System
HAWS SPE KIM	168	Spencer Kim Haws	The Hot Water Saver
HENNINGSE LEE A	65	Lee A Henningsen	Watt Vendor
HICKS DAV E	237	David E Hicks	Hicks Alter-Brake System
HOLLAND RAY P	204	Raymond P Holland Jr	The Induction Propeller
HOPPER THO P	20	Thomas P Hopper	Thermal Shade
HOWALD WER E	48	Werner E Howald	Howald Combustor
HOWARD DEN D	163	Dennis D Howard	Thermotropic Plastic Films
HUNTER JOH	199	John Hunter	Rotary Coal Combustor and Heat Exchangers
HUNTER RAY	296	Raymond Hunter	Shower Bath Economizer
HUNTER ROB M	310	Robert M Hunter	Portable Wastewater Flow Metering Device
INTERNATI MGD COM	23	James E Luber	Microgas Dispersions
IVERSON RUD O	221	John Griffin	Strainercycle
JABLIN RIC	75	Richard Jablin	Coke Quenching
JABLIN RIC	215	Richard Jablin	Slag Waste Heat Boiler
JAIN GUL CHA	35	Gulab Chand Jain	Solar Pond System

Inventor	Name Key	Doe-Num	Contact Name	Short Title
JAMES	CHA B	205	Charles B James	Energy Efficient Arc Welding System
JARMUL	SEY	26	Seymour Jarmul	Compact Energy Reservoir
JEPPSON	MOR R	203	Morris R Jeppson	Microwave Methods and Apparatus for Paving
JONES	R J	27	R J Jones	Waste Heat Utilization, Commercial Cooking
JONES	RAY L	312	Ray L Jones	The "Jones AWT"
JONES	WIL A	259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe
JOO	LOU A	318	Louis A Joo	Bi-Polar Electrode for Hall-Heroult Electrolysis
JORDON	EDG R	131	N. John Beck	Valve Deactuator for Internal Combustion Engines
KALT	CHA G	85	Charles G Kalt	Dielectric Windowshade
KARLICEK	ROB F	197	Robert F Karlicek	Frequency Regulator
KARLSON	ESK L	104	Eskil L Karlson	Low Continuous Energy Mass Separation System
KARLSON	ESK L	181	Eskil L Karlson	The Karlson Ozone Sterilizer
KAUNITZ	CLY F	213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe
KEEP	HEN JR	147	A. D. Barrett, VP	Railroad Switch Heater
KENNICK	H W	109	H. W. Kennick	Hydrostatic Meat Tenderizer
KESSLER	JAM E	129	James E Kessler	Super U System - Snap Strap
KHORSAND	M HOS	135	M Hossein Khorsand	Point Focus Parabolic Solar Collector
KILEY	RIC F	216	Richard F Kiley	Semiconductor Element Mounting
KIRK	CHA M	58	Charles M Kirk	A Multiple Spark System Using Inductive Storage

Inventor Name Key	Doe-Num	Contact Name	Short Title
KLEIN MAX	314	Max Klein	Filter Apparatus
KNEZEVICH MIC	132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material
KRESS EDW S	260	Edward S Kress, President	Method and Apparatus for Handling and Dry Quenching Coke
KURPLE KEN R	232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin
LANDRY ROB G	52	Sherman R Jenney	Air Wedge
LAWLER JAM H	39	James H Lawler	Lawler Steam Generator
LAWLESS W N	190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method
LAZARE LEO	44	Leon Lazare	New Working Fluids for Absorption Heat-Pump
LAZARE LEO	160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle
LEE MAU W	322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control
LEHMANN HER G	22	Herbert G Lehmann	Fuel Burner Attachment
LESHNER MIC D	122	Michael D Leshner	Lean Limit Controller
LEWIS DON C	192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer
LI YAO TZU	151	Yao Tzu Li	Film Type Storm Window
LI YAO TZU	202	Yao Tzu Li	Wobbling Type Distillation Apparatus
LIN PIN WHA	107	Ping-Wha Lin	Waste Products Reclamation Process
LOCKIE DAN A	233	Daniel A Lockie	Mounted Steerable Ripper

Inventor Name Key	Doe-Num	Contact Name	Short Title
LOGIUDICE THO	63	Thomas LoGiudice	Fluorobulb
MACGREGOR DOU	86	Howard Bovars	Coke Desulfurization
MADISON FRA J	313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units
MAHALLA SHA	64	Lester Hendrickson	Mahalla Process
MAJKRZAK DAV S	152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System
MANSOUR MOM N	286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM
MARKS ALV M	9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols
MARR AND W	280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination
MARSHALL DON J	287	Don J Marshall	Automatic Variable Pitch Marine Propeller
MARTIN MER W	169	B O Combs	MIRAFOUNT
MARTON LOU L	139	Louis L Marton	Transformer With Heat Dissipator
MATTSON JOH	117	George E Mattson	"Solarspan" Prism Trap
MATTSON W E	140	Tony Wilhelm	Counter Flow Dual Tube Heat Exchanger
MAYO KEN E	29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms
MCARTHUR JAM	300	John Patton	Casing Stabbing Apparatus
MCCALLUM JOH	38	John McCallum	Reduction Volatilizations
MCCORD JAM W	77	James W McCord	Variable Heat Refrigeration System
MCCORD JAM W	97	James W McCord	Water Drying System
MCNEILL ROB	78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources

Inventor Name Key	Doe-Num	Contact Name	Short Title
MCQUILLEN ALB L	157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.
MEE THO R	170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture
MESHBESHE THO M	219	Thomas M Meshbeshen	Method for Making Acetaldehyde from Ethanol
MESSING RAL A	315	Ralph A Messing	Method of Processing Biodegradable Organic Material
MICHELSON ANA	142	Anatol Michelson	Process for Heatless Production of Hollow Items
MIDLAM EDW W	150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement
MILIARAS E STE	183	E. Stephen Miliaras	Increased Vapor Generator Feature
MILLARD EVE	42	Everett Millard	Flue Baffle Assembly
MONZINI REN	114	Mario Bruno	New Energy-Saving Tire for Motor Vehicles
MORRIS DRE W	24	Drew W Morris	Can and Bottle Crushing Apparatus
NATHANIEL E O	174	Gene Plattner	Skate on Plastic Ice Skating System
NEALY ROB H	198	Robert H Nealy	The Thermatreat System
NIGUEL LAG	172	Edward A Griswold	GEM Electrostatic Filtration System
NORRIS ROB S	21	Robert S Norris	Waste Oil Utilization System
NORTH JOH W	178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material
ODIL KEN W	84	Kenneth W Odil	Kinetic Energy Type Pumping System

Inventor Name Key	Doe-Num	Contact Name	Short Title
ORT JAY E	235	Harry Curtin	Single Stage Anaerobic Digestion Process
OTHMER DON F	264	Donald F Othmer	Desulfurization of Coal
PALESCHUC RIT	2	Rita Paleschuck	Fuel Miser
PALMER FOR M	325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting
PALONE RIC D	55	Richard D Palone	Electrically Heated Sucker-Rod
PANICO C RIC	81	C Richard Panico	Flash Polymerization
PAPIS THA	62	Thaddeus Papis	Tapered Plate Annular Matrix
PARKER LEW W	187	Lewis W Parker	Variable Field Induction Motor
PARKER SID A	43	Sidney A Parker	Thermal Gradient Utilization Cycle
PARKER THO NEI	245	Daniel M Busby	Improved Oil Well Pumping Unit
PASSMAN NAT E	274	Nathan E Passman	Flexible Lighting
PEARL CAR E	153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods
PEMSLER J PAU	123	J. Paul Pemsler, President	Comminution of Ores by a Low-Energy Process
PEMSLER J PAU	295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance
PERHATS F J	133	James V Enright	AUTOTHERM Car Comfort System
PESSEL LEO	30	Ken Walmer	Removing Sulfur Dioxide From Flue Gases
PETERS ANT	253	Anthony Peters	High Performance Heat Pump
PHILLIPS CLY G	115	Clyde G Phillips	Refrigeration System
PIRSON SYL J	146	Ronald M Hertzfeld	Line Integral Method of Magneto-Electric Exploration

Inventor Name Key	Doe-Num	Contact Name	Short Title
PIRSON SYL J	186	Ronald Hertzfeld	Oil Recovery by In-Situ Exfoliation Drive
PLY LEM LES	162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline
POST ARN R	130	Arnold R Post	Furnace Input Capacity Trimming Switch
PRAVDA MIL	191	William Lake	Rotary Heat Pump Air Conditioner
PUGH PAU F	158	Paul F Pugh	Energy Conservative Electric Cable System
RALLIS ANT T	258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool
RAMER JAM L	106	James L Ramer	Deep Shaft Hydro-Electric Power
RAPONI DAN A	15	James L Bullock	Estacron
READ JAY	308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process
REICH DOU R	279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops
RETALLICK WIL B	271	William B Retallick	Hydrogen Storage System
RICHARDSO ALB S	136	Albert S Richardson, Jr.	Windamper
RICHARDSO JOH W	265	John W Richardson	Liquid Treatment for Growing Vegetation
ROBINSON CHA E	244	Brad L Pfeifley	CHARLIE
ROEGLIN ROB M	272	Robert M Roeglin	V-Plus System
ROSE ROB N	309	Robert C LeMay	Process of Smelting with Submerged Burner
ROSS DON R	76	Donald R Ross	The Ross Furnace
ROYSTON JAY R	240	Uwe H Butenhoff	All Steam Heated Sadiron for Commercial Use
RUPERT JOH C	134	John C Rupert	Expanded Polystyrene Bead Insulation System

Inventor Name Key	Doe-Num	Contact Name	Short Title
RUTSHEIN ALE	88	Lawrence Ladin	System-100
RYAN STE	226	Stewart Ryan	An Electronic Leak Detecting System
SACHS MEL H	73	Melvin H Sachs	INTECH
SADLER CHA	124	Charlton Sadler	Solar Collector
SALOMON ROB E	145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides
SALOMON ROB E	276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy
SAMS ART D	281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator
SANDERS NIC ARC	193	Nicholas Archer Sanders	Engine Heating Device
SANDERS NIC ARC	303	Nicholas Archer Sanders	Battery Heating Device
SATER BER L	317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell
SAUNDERS ROB C	144	Robert C Saunders, Jr.	SpaCirc Space Circulation Fan
SAWYER HAR T	268	Robert L Moody	Apparatus for Enhancing Chemical Reactions
SCHEFFER KAR D	126	Karl D Scheffer	Vaclaim
SCHNEIDER DAN J	14	Daniel J Schneider	Aerodynamic Lift Translator
SCHWARTZ CHA A	220	Charles A Schwartz	Deep Throat Resistance Welder
SCHWEITZE PAU H	54	Edward Perry Sikes, Jr.	Optimizer
SEADER J D	127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands
SEADER J D	128	J D Seader	Continuous Distillation Apparatus and Method
SECUNDA DAV J	46	David J Secunda	Thexon Dehydration

Inventor Name Key	Doe-Num	Contact Name	Short Title
SEEMAN GER R	138	Bernard Joseph Margowsky	Phantom Tube
SHELANDER EDW H	93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions
SHIBER SAM	141	Samuel Shiber	New Hydrostatic Transmission
SHULER DON	242	Donald Shuler	New Petersburg Beam Trawl
SMITH ROD L	118	Roderick L Smith	Energy Adaptive Control of Precision Grinding
SMITH RON H	11	Ronald H Smith	Solar Collector
SOMMER EDW J	243	Garry R Kenny	Aluminum Rich Concentrate from Municipal Waste
SOULE ROL P	40	Roland P Soule	Blue Water Gas
STARR ROB JOH	177	Robert John Starr	The Solar I Option
STERNER CAR L	294	Carl L Sterner	Highway Power Patcher
STEWART JAM M	278	James M Stewart	Complete System for Large Solar Water Heating and Storage
STOFEN KEN A	70	Kenneth A Stofen	Compressor Heat-Recovery System
STONE ART F	255	Arthur F Stone	Method and Apparatus for Scrubbing Gas
SUMMA FRA R	12	Thomas J Russo	High Frequency Energy Saving Device
SWARTZ DAV L	298	David L Swartz	Three/Tenths Degree Kelvin Closed Cycle Refrigeration System
SWIHART PAT S	249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells
TALBOTT E M	297	E M Talbott	Series (Two-Wire) V-Controller
TANNEHILL WIL DEA	218	Wilford Dean Tannehill	Behemoth

Inventor Name Key	Doe-Num	Contact Name	Short Title
TANNER CUR J	217	Jeff Landua	Jointless Tape for Oil Well Pumps
TARTAGLIN JER	291	Jerry Tartaglino	Selective Zone Isolation for HVAC System
TERRY RUE CAR	87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ
TERRY RUE CAR	223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ
THAYER VIC R	251	Victor R Thayer (Dec'd)	Low Energy Distillation Process
THOMAS DON R	222	Donald R Thomas	Louver Trombe Solar Storage Unit
TIPPMANN EUG	282	Eugene Tippmann	Insulated Siding
TOURTELOT EDW M	229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism
TRUTNA WIL R	299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column
TUNDERMAN WIL	263	William Tunderman	Method for Reconditioning Rivetless Chain Links
TUNG SHA	319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream
TUNG SHA E	200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas
ULLRICH ROB L	82	Robert L Ullrich	Cool Air Induction
VANWINKLE CLI	90	Clinton Van Winkle	Grain Dryer
VIRLEY DAV	7	Len Spelber	Hydraulically Powered Waste Disposal Device
VOGT JOS P	33	Joseph B Vogt	Temperature Indicating Device
WAHRMAN MAR L	79	Marvin L Wahrman	Oil Well Bit Insert
WALLACE HEN J	113	Henry J Wallace	Wallace Mold Additive System

Inventor Name Key	Doe-Num	Contact Name	Short Title
WANGLER ARL	71	Arleigh Wangler	Knight Guard
WEBER H ROY	137	H Roy Weber	A Portable Pollution Free Automobile Incinerator
WEIKERT ROY J	116	Roy J Weikert	Model 5000 ASEPAK System
WEINGART OSC	99	Robert Gordon, President	Light Weight Composite Trailer Tubes
WHITMAN WIL C	252	William C Whitman	Thermal Bank
WHITMORE JAM B	121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction
WHITTED HUG EDW	250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil
WIEKEN ROB H	57	Robert H Wieken	X-5 Smoke Eliminator
WILDER DAV M	323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material
WINNICK JAC	239	Jack Winnick	Desulfurizing Gas Mixtures
WISE DON E	214	Donald E Wise	Convertible Flat/Drop Trailer
WITHERS JAM C	31	Richard E Engdahl	Ceramic Rotors and Vanes
WOLF CEC H	185	Charles Bach	Insulated Garage Door
WOOD DOU E	234	Douglas E Wood	Geodesic Solar Paraboloid
WOOD HAR E	53	Harry E Wood	High-Efficiency Water Heater
WOOD HAR E	238	Harry E Wood	Clothes Dryer Automatic Shut-Off
WOOLWORTH HAR ROB	10	Harrison Robert Woolworth	Scrap Metal Preheating
WORTMAN AND	307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuselages
YATER JOS C	4	Joseph C Yater	Power Conversion of Energy Fluctuations

Inventor Name Key	Doe-Num	Contact Name	Short Title
YOUNT JOH W	209	John W Yount	Reclaiming Process for Resin Treated Fiberglass
ZACUTO PHI	66	Daniel Ben-Shmuel	Heat Extractor
ZANONI PAU	112	Paul Zanoni	Pump
ZARTARIAN ROB	120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle
ZIMMERN BER	59	Bernard Zimmern	Volumetric Gas Turbine
ZINN MIC F	100	Michael F Zinn	Solaroil
ZUMBRUNNE ALL D	105	Allen D Zumbrunnen	High Frequency Furnace

A P P E N D I X C

INVENTIONS LISTED ALPHABETICALLY

BY

CONTACT'S NAME

Contact Name Key	Doe-Num	Contact Name	Short Title
ACKLEYIII JOH W	306	John W Ackley, III	An Efficiency Computer for Heated or Air Conditioned Buildings
ALEKSANDR JER	290	Jerry Aleksandrow	Low Energy Ice Making Apparatus
ALLEN HEN E	89	Henry E. Allen	Continuous Casting Process and Apparatus
AMANCHARL AMA	143	Amar Amancharla	Oil Well Pump Jack
ANDERSON FLO R	96	Floyd R Anderson	Leavell, Pneumatic Percussion Tools and Systems
ANDERSON FRA L	207	Frank L Anderson	Glass Sheet Manufacturing Method
ARMITAGE WIL F	41	William F Armitage Jr	Photovoltaic Device by Solid Phase Growth
ARTHUR ROB M	47	Robert M Arthur	Wastewater Aeration Power Control Device
AUSTIN GEO C	5	George C Austin	Diesel Engine Conversion System
AVERY DON E	275	Don E Avery	Low Head - High Volume Pump
AVERY DON E	301	Don E Avery	Pump Control System for Windmills
AVERY RIC J	269	Richard J Avery, Junior	Refrigerant Accumulator and Charging Apparatus
BAASCH RIC H	257	Richard H Baasch	Method and Apparatus for Melting Snow
BACH CHA	185	Charles Bach	Insulated Garage Door
BAILEY FRA W	125	Frank W Bailey	The Turbulator Burner System
BALL RAN D	293	Randell D Ball	"Therm-A-Valve" - Insulated Valve Coverings
BALLS BAS W	72	Basil W Balls	Petro-Plant Waste Gas Boiler
BARRETT A D	147	A. D. Barrett, VP	Railroad Switch Heater

Contact Name Key	Doe-Num	Contact Name	Short Title
BARRETT HOW L	195	Howard L Barrett	Proportional Current Battery
BAZIEL CHA	68	Charlie Baziel	Helical Screw Compressor
BECK N JOH	131	N. John Beck	Valve Deactuator for Internal Combustion Engines
BEDROSIAN KAR	171	Karakian Bedrosian	A Method of Preserving Fruits and Vegetables without Refrigeration
BENSHMUEL DAN	66	Daniel Ben-Shmuel	Heat Extractor
BENTLEY RIC B	51	Richard B Bentley	Thermal Efficiency Construction
BERGEY KAR H	110	Karl H. Bergey	Improved Windpower Generating System
BERNHARD FRA C	102	Frank C Bernhard	Method of Burning Residual Fuel Oil in Distillate Fuel Oil Burners
BERTOIA VAL O	95	Val O Bertoia	Omni-Horizontal Axis-Wind Turbine
BIER CHA JAM	83	Charles James Bier	Vertical Solar Louvers
BISSELL LAW E	37	Lawrence E Bissell	Hotwater Engine
BOALS WAY S	49	Wayne S Boals	Automatic Control System for Water Heaters
BOSE RAN K	13	Ranendra K Bose	Anti-Pollution System
BOVARS HOW	86	Howard Bovars	Coke Desulfurization
BRACEGIRD PAU E	261	Paul E Bracegirdle	A New Apparatus for Making Asphalt Concrete
BRANDON RON E	236	Ronald E Brandon	Steam Turbine Packing Ring
BROWNING JAM A	67	James A Browning	Hydraulic Power for Windmills
BRUCE JOH W	16	John W Bruce	Vacuum Drying
BRUNO MAR	114	Mario Bruno	New Energy-Saving Tire for Motor Vehicles

Contact Name Key	Doe-Num	Contact Name	Short Title
BULLOCK JAM L	15	James L Bullock	Estacron
BURK JOH H	302	John H Burk	Rock Impact Breakers
BURLEY BIL	173	Bill Burley	Thermal Ice Cap
BUSBY DAN M	245	Daniel M Busby	Improved Oil Well Pumping Unit
BUTENHOFF UWE H	240	Uwe H Butenhoff	All Steam Heated Sadiro for Commercial Use
CALHOUN JOH C	32	John C Calhoun, President	Wood Gas Reactor
CAMERON ROB	50	Robert Cameron	Scotsman Fuel Energizer
CAMPANA PAT C	80	Patsie C Campana	Improved Unfired Refractory Brick
CARROLL JOH L	92	John L Carroll	Tri-Water
CASPE MAR S	289	Marc S Caspe	An Earthquake Barrier
CHANCELLO FOR E	154	Forrest E Chancellor	Rotating Horsehead for Pumping Units
CHANG KAI CHI	262	Kai-Chih Chang	Energy Saving Pump and Pumping System
CHANG SHI	270	Shih-Chih Chang	Method of Energy Recovery for Wastewater Treatment
CHEN WU CHI	165	Wu-Chi Chen	Process for Recovering Hydrogen from H2S
CHENG SHA	267	Shang-I Cheng	Gasification of Coal and Solid Wastes
CHENG SHA	320	Shang-I Cheng	Coal Gasification with Carbon Dioxide and Lime Recycling
CHILL JAM L	98	James L. Chill, President	Process Development to Conserve Energy and Material Bearings
CHUNG DEB D L	304	Deborah D Chung	Exfoliated Graphite Fibers
CLEARY JAM M	155	James M Cleary	Slip Mining
COHN NAT	247	Nathan Cohn	Improved Control of Bulk Power Transfers

Contact Name Key	Doe-Num	Contact Name	Short Title
COMBS B O	169	B O Combs	MIRAFOUNT
CONE WIL H	60	William H Cone	Electric Transport Refrigerator
CONNERS EDW B	167	Edward B Connors	Vaned Pipe for Pipeline Transport of Solids
CROMWELL PAU J	108	Paul J Cromwell	Processing Recovery of Aluminum
CSONKA ALB B	6	Albert B Csonka	Micro-Carburetor
CURTIN HAR	235	Harry Curtin	Single Stage Anaerobic Digestion Process
CZAJA JUL	273	Julius Czaja	Open Cycle Latent Heat Engine
DAME RIC E	180	Richard E Dame	Adjustable Solar Concentrator (ASC)
DAVE SHA M	101	Sharad M Dave	Controlled Combustion Engine
DAVIES RON	34	Ron Davies	Delphic Thermogenic Paint
DEMPSEY GUY C	277	Guy C Dempsey	Electronic Conveyor Control Apparatus
DICKINSON NOR L	288	Norman L Dickinson	DIPAC and MODIPAC
DIDION GIL W	28	Gilbert W Didion	Ultraflo
DOELLNER OSC LEO	194	Oscar Leonard Doellner	Radiant Energy Power Source for Jet Aircraft
DOLAN JAM J	156	James J Dolan	Direct-Current Electrical Heat-Treatment.
DORNIER JAY	56	Jay Dornier	Flexaflo-The Wet Fuel Dryer
DOYLE DAV W	17	David W. Doyle, V.P.	Osmotic-Hydro Power Generation
DUPONT ANT A	161	Anthony A duPont	duPont Connell Energy Coal Gasification Process
DURBIN ENO J	69	Enoch J Durbin	Ionic Fuel Control

Contact Name Key	Doe-Num	Contact Name	Short Title
EASTERLY HER D	311	Herbert D Easterly	Auxiliary Truck Heater
EASTIN JOH H	196	John A Eastin	Manufacture of Nitrogen Fertilizer on a Farm
EASTMAN GER	189	Gerald Eastman	Pump Jack
ECKBERG EDW E	103	Edwin E Eckberg	Low Voltage Ionic Fluorescent Light Bulb
EDWARDS CHA E	179	Charles E Edwards	Development and Commercialization of Low Cost Non-Metallic, Solar Systems
EDWARDS THO C	225	Thomas C Edwards	ROVAC High Efficiency Low Pressure Air Conditioning System
EGOSI DAN	266	Dan Egosi	Energy Conversion Method
ELLIOTT GUY RB	231	Guy R B Elliott	Natural Gas from Deep-Brine Solutions
ENGDAHL RIC E	31	Richard E Engdahl	Ceramic Rotors and Vanes
ENRIGHT JAM V	133	James V Enright	AUTOTHERM Car Comfort System
ERICKSON DON C	3	Donald C Erickson	Hydrogen Generation by Oxidation-Reduction of Tin
ERICKSON DON C	25	Donald C Erickson	Sulfur Removal From Producer Gas
ERICKSON DON C	230	Donald C Erickson	Absorption Heat Pump
ERNST HER	285	Hermann Ernst	Ring Seals for Railroad Axle Bearings
EVANS ROB F	166	Robert F Evans	Borehole Angle Control
EVANS ROB F	182	Robert F Evans	Improved Seal for Geothermal Drill Bit
EVANS ROB F	211	Robert F Evans	Shock Mounted Stratapax Bit
FAWLEY NOR C	208	Norman C Fawley, President	Fuel Transport Modules
FAWLEY NOR C	227	Norman C Fawley	CRM Pipe

Contact Name Key	Doe-Num	Contact Name	Short Title
FIORITO WIL M	94	William M FioRito	Lantz Converter
FITTERER G R	18	G R Fitterer	Control of Low Carbon Aluminum Steels
FITTERER G R	74	G. R. Fitterer, President	Fuel Cell
FLATLAND LLO	210	Lloyd Flatland	Ultra High Speed Drilling Device
FLICKINGE DAL	176	Dale Flickinger	Self-Contained Portable Solid Fuel Furnaces
FOWLER JOE W	45	Joe W Fowler	Bulk Cure Tobacco Barn
FRANCOVIT THO F	292	Thomas F Francovitch	Roof Construction Having Membrane and Photo Cells
FRESCO ANT N	284	Anthony N Fresco	Atomized Oil-Injected Rotary Screw Compressors
GABEL JON	206	Jonathan Gabel	Electromechanical Energy Conversion Devices
GARCIA JUA M	246	Juan M Garcia, Junior	Maximum Cruise Performance
GAY RIC J	241	Richard J Gay	Polysulfide Oil Field Corrosion Control System
GIFFORD PHI H	321	Philip H Gifford II	Recovery of Hydrogen and Oil from Oil Shale
GILL JOH D	164	John D Gill	Elastomer Energy Recovery Elements
GINGRAS RIC P	36	Richard P Gingras	Computerstat
GIRN MET PRO	254	Girn Metal Products, Inc	"Turbo-Glo" Immersion Furnace
GOLD NAT	184	Nathan Gold	Coasting Fuel Shutoff
GORDON ROB	99	Robert Gordon, President	Light Weight Composite Trailer Tubes
GOURDINE MER C	228	Meredith C Gourdine	EGD Fog Dispersal System
GRAMLING WIL D	159	William D Gramling	Non-Tubing Type Gas Powered Lift Device
GRANRYD THO G	248	Thorvald G Granryd	Dyna-Bite Traction Intensifier

Contact Name Key	Doe-Num	Contact Name	Short Title
GREEN EVE S	256	Evert S Green	Plant Irrigation Method
GRIFFIN JOH	221	John Griffin	Strainercycle
GRIMMINGE GWY	224	Gwyer Grimminger, Presiden	Haile Alternate Fuel Grain Dryer
HAMMOND OGD H	149	Ogden H Hammond	SCOTCH - (Simple, Cost-Effective, Optimum Temperature Control for Housing)
HASPERT JOH C	111	John C. Haspert	Haspert Mining System
HASPERT JOH C	188	John C Haspert	Remote Controlled Underground Mining System
HAUSKNECH LOU A	201	Louis A Hausknecht	Hydraulic, Variable, Engine Valve Actuation System
HAWS SPE KIM	168	Spencer Kim Haws	The Hot Water Saver
HENDRICKS LES	64	Lester Hendrickson	Mahalla Process
HENNINGSE LEE A	65	Lee A Henningsen	Watt Vendor
HERTZFELD RON	186	Ronald Hertzfeld	Oil Recovery by In-Situ Exfoliation Drive
HERTZFELD RON M	146	Ronald M Hertzfeld	Line Integral Method of Magneto-Electric Exploration
HICKS DAV E	237	David E Hicks	Hicks Alter-Brake System
HOLLAND RAY P	204	Raymond P Holland Jr	The Induction Propeller
HOPPER THO P	20	Thomas P Hopper	Thermal Shade
HOWALD WER E	48	Werner E Howald	Howald Combustor
HOWARD DEN D	163	Dennis D Howard	Thermotropic Plastic Films
HUISLANDE HUG	212	Hugh Huislander	Water Warden
HUNTER JOH	199	John Hunter	Rotary Coal Combustor and Heat Exchangers
HUNTER RAY	296	Raymond Hunter	Shower Bath Economizer

Contact Name Key	Doe-Num	Contact Name	Short Title
HUNTER ROB M	310	Robert M Hunter	Portable Wastewater Flow Metering Device
JABLIN RIC	75	Richard Jablin	Coke Quenching
JABLIN RIC	215	Richard Jablin	Slag Waste Heat Boiler
JAIN GUL CHA	35	Gulab Chand Jain	Solar Pond System
JAMES CHA B	205	Charles B James	Energy Efficient Arc Welding System
JARMUL SEY	26	Seymour Jarmul	Compact Energy Reservoir
JENNEY SHE R	52	Sherman R Jenney	Air Wedge
JEPPSON MOR R	203	Morris R Jeppson	Microwave Methods and Apparatus for Paving
JONES R J	27	R J Jones	Waste Heat Utilization, Commercial Cooking
JONES RAY L	312	Ray L Jones	The "Jones AWT"
JONES WIL A	259	William A Jones	Hydrostatic Support Sleeve and Rod - Gas Release Probe
JOO LOU A	318	Louis A Joo	Bi-Polar Electrode for Hall-Heroult Electrolysis
KALT CHA G	85	Charles G Kalt	Dielectric Windowshade
KARLICEK ROB F	197	Robert F Karlicek	Frequency Regulator
KARLSON ESK L	104	Eskil L Karlson	Low Continuous Energy Mass Separation System
KARLSON ESK L	181	Eskil L Karlson	The Karlson Ozone Sterilizer
KAUNITZ CLY F	213	Clyde F Kaunitz	The Kaunitz Process for Welding Pipe
KENNICK H W	109	H. W. Kennick	Hydrostatic Meat Tenderizer
KENNY GAR R	243	Garry R Kenny	Aluminum Rich Concentrate from Municipal Waste
KESSLER JAM E	129	James E Kessler	Super U System - Snap Strap

Contact Name Key	Doe-Num	Contact Name	Short Title
KHORSAND M HOS	135	M Hossein Khorsand	Point Focus Parabolic Solar Collector
KILEY RIC F	216	Richard F Kiley	Semiconductor Element Mounting
KINNEY REE	91	Rees Kinney, Atty.	Mine Brattice
KIRK CHA M	58	Charles M Kirk	A Multiple Spark System Using Inductive Storage
KLEIN MAX	314	Max Klein	Filter Apparatus
KNEZEVICH MIC	132	Michael Knezevich	Process for Reclaiming and Upgrading Thin-Walled Malleable Waste Material
KRESS EDW S	260	Edward S Kress, President	Method and Apparatus for Handling and Dry Quenching Coke
KURPLE KEN R	232	Kenneth R Kurple	Method of Separating Lignin and Making Epoxide-Lignin
LADIN LAW	88	Lawrence Ladin	System-100
LANDUA JEF	217	Jeff Landua	Jointless Tape for Oil Well Pumps
LASKEY MUR S	61	Murry S. Laskey	Fuel Preparation Process
LAWLER JAM H	39	James H Lawler	Lawler Steam Generator
LAWLESS W N	190	W N Lawless	Oxygen-Conducting Material and Oxygen-Sensing Method
LAZARE LEO	44	Leon Lazare	New Working Fluids for Absorption Heat-Pump
LAZARE LEO	160	Leon Lazare	High Efficiency Absorption Refrigeration Cycle
LEE MAU W	322	Maurice W Lee, Junior	Electrical Resistance Cooking Apparatus with Automatic Circuit Control
LEHMANN HER G	22	Herbert G Lehmann	Fuel Burner Attachment

Contact Name Key	Doe-Num	Contact Name	Short Title
LEMAY ROB C	309	Robert C LeMay	Process of Smelting with Submerged Burner
LESHNER MIC D	122	Michael D Leshner	Lean Limit Controller
LEWIS DON C	192	Donald C Lewis	Closed Cycle Dehumidification Clothes Dryer
LI YAO TZU	151	Yao Tzu Li	Film Type Storm Window
LI YAO TZU	202	Yao Tzu Li	Wobbling Type Distillation Apparatus
LIN PIN WHA	107	Ping-Wha Lin	Waste Products Reclamation Process
LOCKIE DAN A	233	Daniel A Lockie	Mounted Steerable Ripper
LOGIUDICE THO	63	Thomas LoGiudice	Fluorobulb
LOWENTHAL MUR G	1	Murray G Lowenthal	Demand Metering System for Electric Energy
LUBER JAM E	23	James E Luber	Microgas Dispersions
MADISON FRA J	313	Frank J Madison II	Process Controller for Stripper Oil Well Pumping Units
MAJKRZAK DAV S	152	David S Majkrzak	Vehicle Exhaust Gas Warm-up System
MANSOUR MOM N	286	Momtaz N Mansour	Use of Pulse-Jet for Atomization of CWM
MARGOWSKI BER JOS	138	Bernard Joseph Margowsky	Phantom Tube
MARKS ALV M	9	Alvin M Marks	Heat/Electric Power Conversion via Charged Aerosols
MARR AND W	280	Andrew W Marr, Junior	Downhole and Above Ground Resistance Heating for Paraffin Elimination
MARSHALL DON J	287	Don J Marshall	Automatic Variable Pitch Marine Propeller
MARTON LOU L	139	Louis L Marton	Transformer With Heat Dissipator

Contact Name Key	Doe-Num	Contact Name	Short Title
MATTSON GEO E	117	George E Mattson	"Solarspan" Prism Trap
MAYO KEN E	29	Kenneth E Mayo	Tuned Sphere Stable Ocean Platforms
MCCALLUM JOH	38	John McCallum	Reduction Volatilizations
MCCORD JAM W	77	James W McCord	Variable Heat Refrigeration System
MCCORD JAM W	97	James W McCord	Water Drying System
MCELMURRY MAX	305	Max McElmurry	Automatic Filter Network Protection
MCNEILL ROB	78	Robert McNeill	System for High Efficiency Power Generation from Low Temperature Sources
MCQUILLEN ALB L	157	Albert L McQuillen, Jr	Magnaseal Method and Means for Sealing Steel Ingot Casting Molds to Stools.
MEE THO R	170	Thomas R Mee	Fog System - Low Energy Freeze Protection for Agriculture
MESHBESHE THO M	219	Thomas M Meshbeshen	Method for Making Acetaldehyde from Ethanol
MESSING RAL A	315	Ralph A Messing	Method of Processing Biodegradable Organic Material
MICHELSON ANA	142	Anatol Michelson	Process for Heatless Production of Hollow Items
MIDLAM EDW W	150	Edward W Midlam	Utilization of Oil Waste in the Manufacture of Portland Cement
MILIARAS E STE	183	E. Stephen Miliaras	Increased Vapor Generator Feature
MILLARD EVE	42	Everett Millard	Flue Baffle Assembly
MOODY ROB L	268	Robert L Moody	Apparatus for Enhancing Chemical Reactions

Contact Name Key	Doe-Num	Contact Name	Short Title
MORRIS DRE W	24	Drew W Morris	Can and Bottle Crushing Apparatus
NEALY ROB H	198	Robert H Nealy	The Thermatreat System
NIGUEL LAG	172	Edward A Griswold	GEM Electrostatic Filtration System
NORRIS ROB S	21	Robert S Norris	Waste Oil Utilization System
NORTH JOH W	178	John W North	Process and Apparatus for Producing Cellulated Vitreous Refractory Material
ODIL KEN W	84	Kenneth W Odil	Kinetic Energy Type Pumping System
OTHMER DON F	264	Donald F Othmer	Desulfurization of Coal
PALESCHUC RIT	2	Rita Paleschuck	Fuel Miser
PALMER FOR M	325	Forrest M Palmer	Continuous Non-Ferrous Strip Casting
PALONE RIC D	55	Richard D Palone	Electrically Heated Sucker-Rod
PANICO C RIC	81	C Richard Panico	Flash Polymerization
PAPIS THA	62	Thaddeus Papis	Tapered Plate Annular Matrix
PARKER LEW W	187	Lewis W Parker	Variable Field Induction Motor
PARKER SID A	43	Sidney A Parker	Thermal Gradient Utilization Cycle
PASSMAN NAT E	274	Nathan E Passman	Flexible Lighting
PATTON JOH	300	John Patton	Casing Stabbing Apparatus
PEARL CAR E	153	Carl E Pearl	A New Equipment Design Concept for Storage of Hot Foods
PEMSLER J PAU	123	J. Paul Pemsler, President	Comminution of Ores by a Low-Energy Process
PEMSLER J PAU	295	J Paul Pemsler	Improved Method of Electroplating Aluminum for Corrosion Resistance

Contact Name Key	Doe-Num	Contact Name	Short Title
PETERS ANT	253	Anthony Peters	High Performance Heat Pump
PFEIFLEY BRA L	244	Brad L Pfeifley	CHARLIE
PHILLIPS CLY G	115	Clyde G Phillips	Refrigeration System
PLATTNER GEN	174	Gene Plattner	Skate on Plastic Ice Skating System
PLY LEM LES	162	Lemuel Leslie Ply	Tubular Pneumatic Conveyor Pipeline
POST ARN R	130	Arnold R Post	Furnace Input Capacity Trimming Switch
PUGH PAU F	158	Paul F Pugh	Energy Conservative Electric Cable System
RALLIS ANT T	258	Anthony T Rallis	Corrosion Protection Process for Bore Hole Tool
RAMER JAM L	106	James L Ramer	Deep Shaft Hydro-Electric Power
READ JAY	308	Jay Read	Binary Azeotropic, Hot Gas, Fat Extraction Process
REICH DOU R	279	Douglas R Reich	Method and Means for Preventing Frost Damage to Crops
REINBERGE CLA H	19	Clair H Reinbergen, Pres.	Rigid Board Insulation
RETALLICK WIL B	271	William B Retallick	Hydrogen Storage System
RICHARDSO ALB S	136	Albert S Richardson, Jr.	Windamper
RICHARDSO JOH W	265	John W Richardson	Liquid Treatment for Growing Vegetation
ROEGLIN ROB M	272	Robert M Roeglin	V-Plus System
ROGERS THO F	148	Thomas F Rogers	Reclamation of Oil and High-Grade Iron Concentrates from Steel Mill Wastes
ROSS DON R	76	Donald R Ross	The Ross Furnace
RUPERT JOH C	134	John C Rupert	Expanded Polystyrene Bead Insulation System

Contact Name Key	Doe-Num	Contact Name	Short Title
RUSSO THO J	12	Thomas J Russo	High Frequency Energy Saving Device
RYAN STE	226	Stewart Ryan	An Electronic Leak Detecting System
SACHS MEL H	73	Melvin H Sachs	INTECH
SADLER CHA	124	Charlton Sadler	Solar Collector
SALOMON ROB E	145	Robert E Salomon	Solar Conversion by Concentration Cells with Hydrides
SALOMON ROB E	276	Robert E Salomon	Gas Concentration Cells as Converters of Heat into Electrical Energy
SAMS ART D	281	Arthur D Sams	Sun Synchronous Solar Powered Refrigerator
SANDERS NIC ARC	193	Nicholas Archer Sanders	Engine Heating Device
SANDERS NIC ARC	303	Nicholas Archer Sanders	Battery Heating Device
SATER BER L	317	Bernard L Sater	Edge-Illuminated Multi-Junction (VMJ) Solar Cell
SAUNDERS ROB C	144	Robert C Saunders, Jr.	SpaCirc Space Circulation Fan
SCHALLIG HAN J	191	William Lake	Rotary Heat Pump Air Conditioner
SCHEFFER KAR D	126	Karl D Scheffer	Vaclaim
SCHNEIDER DAN J	14	Daniel J Schneider	Aerodynamic Lift Translator
SCHWARTZ CHA A	220	Charles A Schwartz	Deep Throat Resistance Welder
SEADER J D	127	J D Seader	Process and Apparatus to Produce Crude Oil from Tar Sands
SEADER J D	128	J D Seader	Continuous Distillation Apparatus and Method
SECUNDA DAV J	46	David J Secunda	Thexon Dehydration
SEWARD W W	175	W W Seward	A Low-Energy Carpet Backing System

Contact Name Key	Doe-Num	Contact Name	Short Title
SHELANDER EDW H	93	Edward H Shelander	Shelander-Burrows Process for Recovery of Metallic Values from Smelter Emissions
SHIBER SAM	141	Samuel Shiber	New Hydrostatic Transmission
SHULER DON	242	Donald Shuler	New Petersburg Beam Trawl
SIKES EDW PER	54	Edward Perry Sikes, Jr.	Optimizer
SMITH MAR A	283	Mark A Smith	Aluminum Roofing Chips
SMITH OTI W	119	Otis W Smith	Air Ratio Controller (AERTROL)
SMITH ROD L	118	Roderick L Smith	Energy Adaptive Control of Precision Grinding
SMITH RON H	11	Ronald H Smith	Solar Collector
SNYDER RAY E	316	Ray E Snyder	Thrust Impact Rock Splitter
SNYDER RAY E	324	Ray E Snyder	Foliar Fertilization Process
SOULE ROL P	40	Roland P Soule	Blue Water Gas
SPELBER LEN	7	Len Spelber	Hydraulically Powered Waste Disposal Device
STARR RON JOH	177	Robert John Starr	The Solar I Option
STERNER CAR L	294	Carl L Sterner	Highway Power Patcher
STEWART JAM M	278	James M Stewart	Complete System for Large Solar Water Heating and Storage
STOFEN KEN A	70	Kenneth A Stofen	Compressor Heat-Recovery System
STONE ART F	255	Arthur F Stone	Method and Apparatus for Scrubbing Gas
SWARTZ DAV L	298	David L Swartz	Three/Tenths Degree Kelvin Closed Cycle Refrigeration System
SWIHART PAT S	249	Patrick S Swihart, Senior	Subsurface Flow Control for Gas Wells

Contact Name Key	Doe-Num	Contact Name	Short Title
TALBOTT E M	297	E M Talbott	Series (Two-Wire) V-Controller
TANNEHILL WIL DEA	218	Wilford Dean Tannehill	Behemoth
TARTAGLIN JER	291	Jerry Tartaglino	Selective Zone Isolation for HVAC System
TERRY RUE CAR	87	Ruel Carlton Terry	Recovering Uranium From Coal In-Situ
TERRY RUE CAR	223	Ruel Carlton Terry	Minimizing Subsidence Effects during Production of Coal In Situ
THAYER VIC R	251	Victor R Thayer (Dec'd)	Low Energy Distillation Process
THOMAS DON R	222	Donald R Thomas	Louver Trombe Solar Storage Unit
TIPPMANN EUG	282	Eugene Tippmann	Insulated Siding
TOURTELOT EDW M	229	Edward M Tourtelot (Dec'd)	Variable Valve-Timing Mechanism
TRUTNA WIL R	299	William R Trutna	Process for Using Cocurrent Contacting Distillation Column
TUNDERMAN WIL	263	William Tunderman	Method for Reconditioning Rivetless Chain Links
TUNG SHA	319	Shao-E Tung	Removal of Hydrogen Sulfide from a Gas Stream
TUNG SHA E	200	Shao-E Tung	Removal of Sulfur Dioxide from Stack Gas
TUNMORE FRE	8	Fred Tunmore	Inertial Storage Transmission
ULLRICH ROB L	82	Robert L Ullrich	Cool Air Induction
VANWINKLE CLI	90	Clinton Van Winkle	Grain Dryer
VOGT JOS P	33	Joseph B Vogt	Temperature Indicating Device
WAHRMAN MAR L	79	Marvin L Wahrman	Oil Well Bit Insert

Contact Name Key	Doe-Num	Contact Name	Short Title
WALLACE HEN J	113	Henry J Wallace	Wallace Mold Additive System
WALMER KEN	30	Ken Walmer	Removing Sulfur Dioxide From Flue Gases
WANGLER ARL	71	Arleigh Wangler	Knight Guard
WEBER H ROY	137	H Roy Weber	A Portable Pollution Free Automobile Incinerator
WEIKERT ROY J	116	Roy J Weikert	Model 5000 ASEPAK System
WHITMAN WIL C	252	William C Whitman	Thermal Bank
WHITMORE JAM B	121	James B Whitmore	Solar Space Heating for both Retrofit and New Construction
WHITTED HUG EDW	250	Hugh Edwin Whitted III	A System to Adapt Diesel Engines for Crude Oil
WIEKEN ROB H	57	Robert H Wieken	X-5 Smoke Eliminator
WILDER DAV M	323	David M Wilder	Rolling Mill for Reduction of Moisture Content in Waste Material
WILHELM TON	140	Tony Wilhelm	Counter Flow Dual Tube Heat Exchanger
WINNICK JAC	239	Jack Winnick	Desulfurizing Gas Mixtures
WISE DON E	214	Donald E Wise	Convertible Flat/Drop Trailer
WOOD DOU E	234	Douglas E Wood	Geodesic Solar Paraboloid
WOOD HAR E	53	Harry E Wood	High-Efficiency Water Heater
WOOD HAR E	238	Harry E Wood	Clothes Dryer Automatic Shut-Off
WOOLWORTH HAR ROB	10	Harrison Robert Woolworth	Scrap Metal Preheating
WORTMAN AND	307	Andrew Wortman	Vortex Generators for Aft Regions of Aircraft Fuselages

Contact Name Key	Doe-Num	Contact Name	Short Title
YATER JOS C	4	Joseph C Yater	Power Conversion of Energy Fluctuations
YOUNT JOH W	209	John W Yount	Reclaiming Process for Resin Treated Fiberglass
ZANONI PAU	112	Paul Zanoni	Pump
ZARTARIAN ROB	120	Robert Zartarian	Vapor Heat Transfer Commercial Griddle
ZIMMERN BER	59	Bernard Zimmern	Volumetric Gas Turbine
ZINN MIC F	100	Michael F Zinn	Solaroll
ZUMBRUNNE ALL D	105	Allen D Zumbrunnen	High Frequency Furnace

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